THOMSON MULTI MEDIA

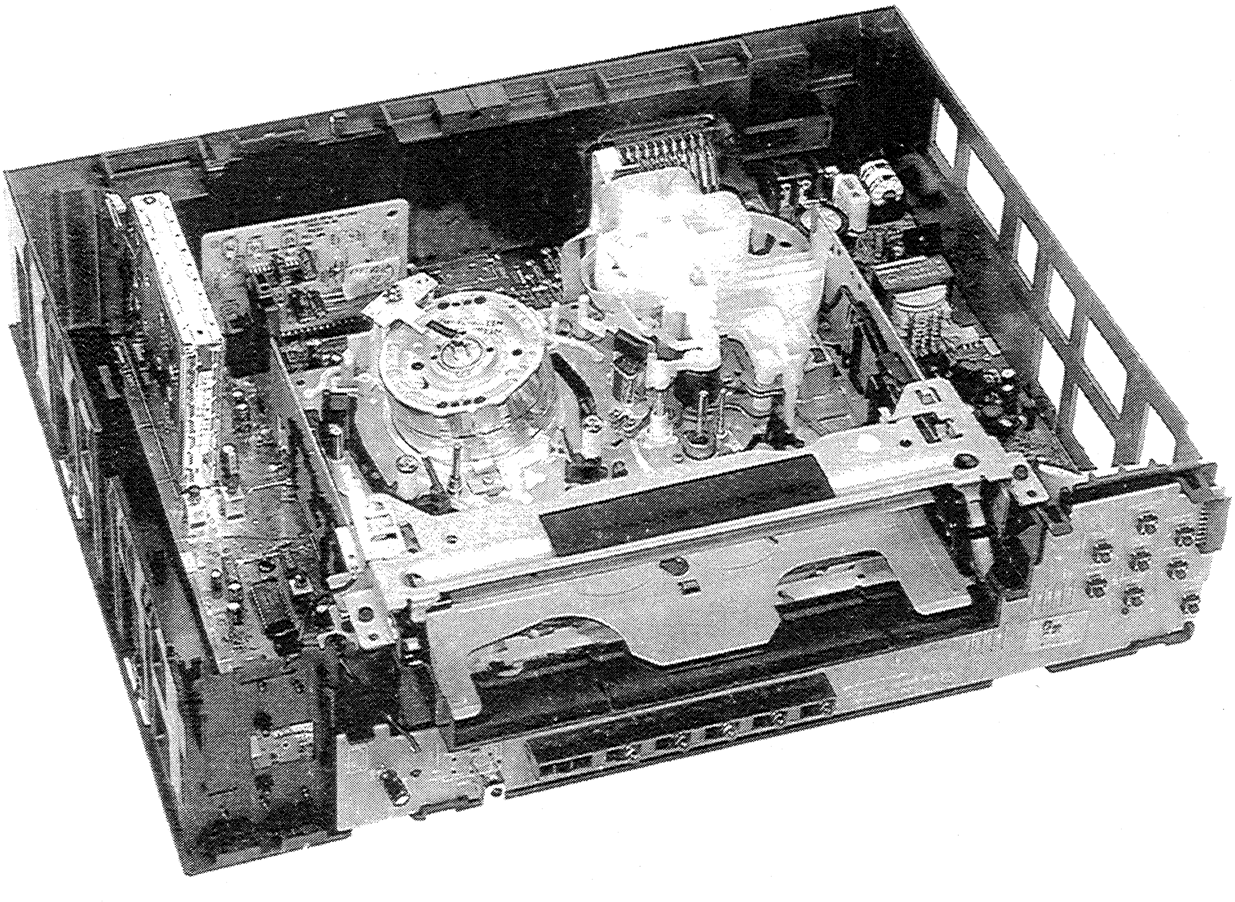
Brandt FERGUSON **NORDMENDE** SABA **TELEFUNKEN** **THOMSON**

V20651

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R 6000 MONO



⚠

WARNING : *Before servicing this set read the safety recommendations.*
ATTENTION : *Avant toute intervention sur cet appareil, lire les recommandations de sécurité.*
ACHTUNG : *Bei jedem Eingriff im Gerät, die Sicherheitsvorschriften beachten.*
ATTENZIONE : *Prima di intervenire sull'apparecchio, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 350 411 70 - 0697 - 25,7M - R6000 MONO

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⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité du fabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) durch nicht normengerechte Teile ersetzt werden, erlischt die Haftung des Herstellers.

La sostituzione degli elementi di sicurezza (marcati con il segno ⚠) con componenenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso è "esclusa la responsabilità " del costruttore.

La subtitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

⚠ Do not disconnect modules when they are energized!
Repairs on power supply section are to be carried out only with isolating transformer.

⚠ Ne pas retirer les modules lorsqu' ils sont sous tension.
N'effectuer les travaux de maintenance sur la partie reliée au secteur (Switch Mode) qu'au travers d'un transformateur d'isolement.

⚠ Module nicht bei eingeschaltetem Gerät entfernen !
Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

⚠ Non scollegare i moduli quando sono alimentati!
Intraprendere riparazioni sulla sezione alimentatore solo con trasformatore isolante.

⚠ No desconectar los módulos cuando están activados.
Las reparaciones en la sección de alimentación de energía deben ser ejecutadas solamente con un transformador de separación.

TECHNICAL DATA AND COMPOSITION OF VIDEO RECORDERS - CARACTERISTIQUES TECHNIQUES ET COMPOSITION DES MAGNETOSCOPES - TECHNISCHE DATEN UND ZUSAMMENSETZUNG VIDEORECORDERS - CARATTERISTICHE TECNICHE E COMPOSIZIONE VIDEOREGISTRATORI - CARACTERISTICAS TECNICA Y COMPOSICIÓN DE LOS VÍDEOS

• Power requirement: 220 - 240 V ± 10%
Alimentation: 50/60Hz
Netzeil:
Alimentazione:
Alimentación:

• Programming: **SHOWVIEW**
Programmation:
Timer:
Programmazione:
Programación:

• Tape speed: SP
Vitesse de défilement: SP/LP *
Bandgeschwindigkeit: SP/LP/SLP **
Velocitá del nastro:
Velocidad de la cinta:

• 4 Heads Helical Scan system:
4 têtes video:
4 Video-Köpfe: * / **
4 Testine video
4 Cabezas video:

• 2 Heads Helical Scan system:
2 têtes video:
2 Video-Köpfe:
2 Testine video
2 Cabezas video:

• Tape format: VHS
Format video:
Video-system:
Formato video:
Formato vídeo:

• Consumption: 17 W
Consommation: 4,8 W STD-BY
Leitstungsaufnahme:
Consumo:
Consumo:

• Sound: Mono
Son:
Ton:
Suono:
Sonido:

• Power save: 30 min.
Sécurité secteur:
Gangreserve:
Sicurezza alimentazione:
Seguridad red:

SP = 23,39 mm/sec. LP = 11,70 mm/sec. SLP = 33,35 mm/sec. (Only NTSC PB)

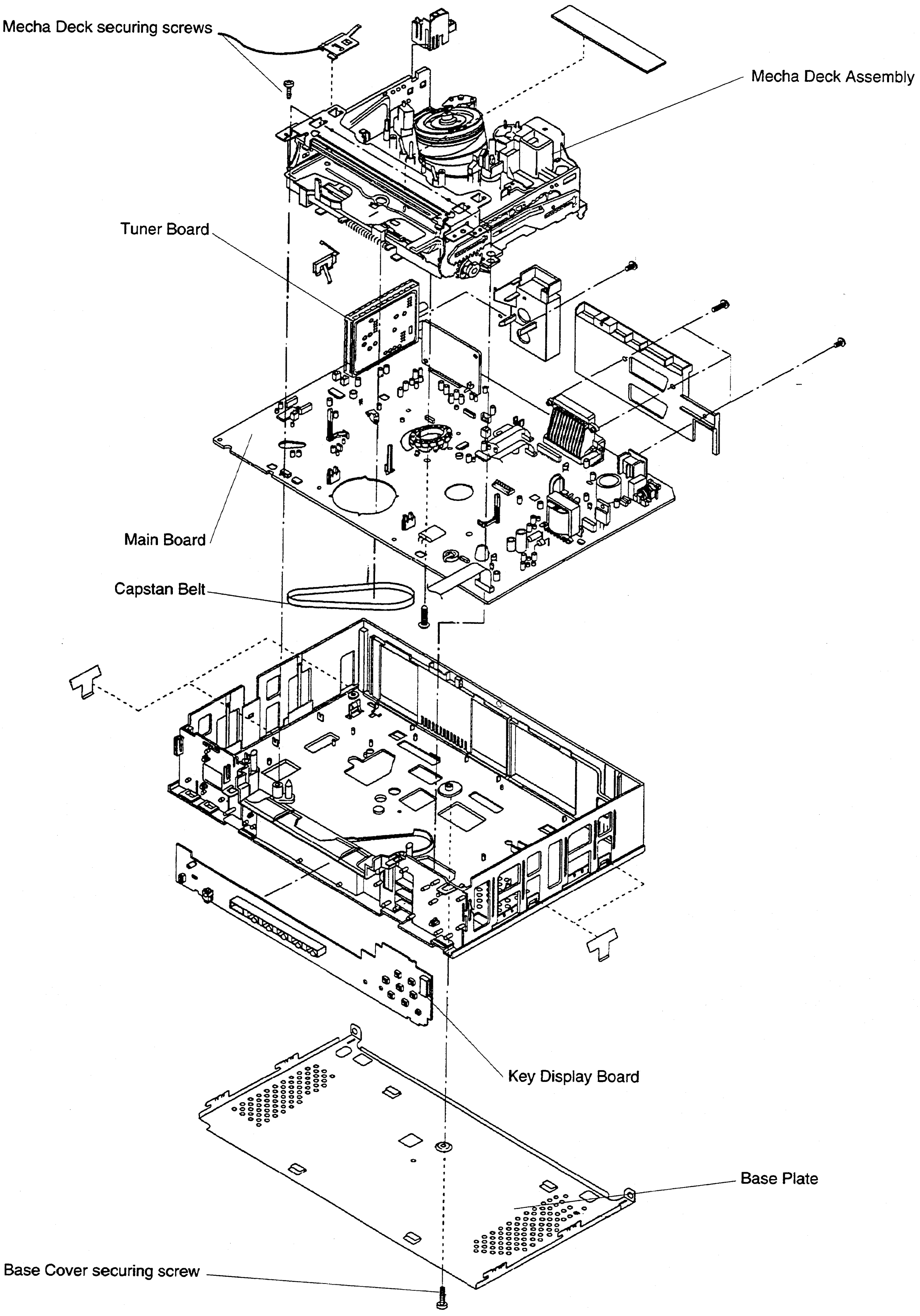
For service information on the deck mechanism see the separate publication " R 4000 SERIES MECHANICAL ADJUSTMENTS " and " R 4000 DRUM DISASSEMBLY / ASSEMBLY SERVICE MANUAL "
Pour toute intervention ou réglage sur la partie mécanique, se reporter au FASCICULE MECANIQUE R 4000 ainsi qu'à son additif: " DEMONTAGE DU TAMBOUR SUR LES MAGNETOSCOPES EQUPES DU CHASSIS R4000 "
Informationen über mechanische Einstellungen entnehmen Sie bitte dem Handbuch " Mechanische Einstellungen R4000 "
Ulteriori informazioni sulla meccanica si possono essere trovare nelle seguenti pubblicazioni: "SERIE R4000 REGOLAZIONI MECCANICHE" e "R4000 MANUALE DI SERVIZIO PER IL DISASSEMBLAGGIO E ASSEMBLAGGIO DEL TAMBURO".
Para información de servicio técnico sobre el mecanismo de la platina, consulte la documentación separada "AJUSTES MECANICOS SERIES R4000" y "MANUAL DE SERVICIO ENSAMBLAJE DEL TAMBOR R4000".

	SCHEMATIC DIAGRAMS AND PCBs (Pages)								
Reference	Number of SETUP 14 Digits	Interconnexions diagrams	Main PCB	POW./IF/TU	Main Servo	Main Video	I/O interface	Secam	KDB/FCB
THOMSON									
VP 2701	18128400B19103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 21 to 24
VP 2750	02108444B09103	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 21 to 24
VP 4701 **	18128A00B19183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 21 to 24
VP 4750 **	02108E44B09183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 21 to 24
TELEFUNKEN									
M 9720 * *2 heads*	18128800319183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 29 to 32
SABA									
VR 8020	18028400719103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	15 33 to 36
VR 8023	18128400B19103	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 25 to 28
VR 8027	02108404B09103	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 25 to 28
VR 8043 **	18128A00B19183	13 to 14	71 to 76	59 to 66	43 to 50	52 to 54 57 to 58	77 to 79	-	16 25 to 28
VR 8047	02108E04B09183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	16 25 to 28
BRANDT									
VK 231 PS **	0100840440110B	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	15 17 to 20
VK 431 PS **	01008E0440118B	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	51 55 to 58	77 to 79	37 to 42	15 17 to 20
FERGUSON									
FV 200 LV * *2 heads*	79018800789183	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	15 x to x
FV 201 LV * *2 heads*	79218808B8B383	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 x to x
FV 202 LV **	79218A08B8B383	13 to 14	71 to 76	59 to 62 67 to 70	43 to 50	52 to 54 57 to 58	77 to 79	37 to 42	16 x to x

Abbreviations / Abreviations / Abkürzungen / Abbreviazioni / Abreviaciones

AC	Alternating Current
ACC	Automatic Colour Control
ACK	Automatic Colour Killer
AD.REF	Analog/Digital Converter Reference
AE	Audio Erase
AFC	Automatic Frequency Control
AGC	Automatic Gain Control
A_IF	Audio IF
ALC	Automatic Level Control
AMP	Amplifier
APC	Automatic Phase Control
AP.CONT	Aperture Control
AV	Audio-Video
A/V SWP	Audio/Video Switching Point (DRUM FF)
B.EMPH	Burst Emphasis
B.DEEMPH	Burst Deemphasis
BG	Burst Gate
BID	Burst Identification
BLK	Blanking
BPF	Band Pass Filter
CAP	Capstan
CBC	Cable Box Control (Satellite Control)
CCD	Charge Coupled Device
CH	Channel
CFG	Capstan Frequency Generator
CLK	Clock
COMP	Comparator
CONV	Converter
CPWM	Capstan Pulse Width Modulation
C-REG	Capstan Regulation
CR	Colour Rotary
CS	Chip Select
CSYNC	Composite Synch
CTL	Control
DC	Direct Current
D.LIM	Double Limiter
DEEMPH	Deemphasis
DET	Detector
D-FG	Drum Frequency Generator
DFF	Drum Flip Flop
DIF.EQ	Differential Equalizer
DIG	Digital
DLY	Delay
DOC	Drop Out Compensation
E-E	Electronic-Electronic
EMPH	Emphasis
ENV	Envelope
EP	Extended Play
EQ	Equalizer
F.E	Full Erase
F.REW	Fast Rewind
F.FWD	Fast Forward
F/R	Forward/Rewind
FCB	Front Connection Board
FF	Fast Forward
FG	Frequency Generator
FMCI	FM Carrier Interleave
FWD	Forward
GND	Ground
GCA	Gain Controlled Amplifier
HASEL	Head Amplifier Select
HAB	Head Amplifier Board
HD	Horizontal Synch Pulse
HPF	High Pass Filter
I.R	Infra Red
ID	Identification
INP/IN	Input
KDB	Key Display Board
LIM	Limiter
LP	Long Play
LPF	Low Pass Filter
MESECAM	Middle East Secam
NC	Noise Canceller
OSD	On Screen Display
PB	Play Back
PB_C	Play Back Chroma
PCB	Printed Circuit Board
PDC	Program Delivery Control
PG	Pulse Generator
PH	Pseudo Horizontal Synch
PIF	Picture IF
PLL	Phase Locked Loop
PS	Phase Switch
PV	Pseudo Vertical Synch
PWM	Pulse Width Modulation
REC	Record
REC_C	Record Chroma
REW	Rewind
REV	Reverse
SCL	Serial Clock
SDA	Serial Data
SEC	SECAM
SU REEL	Supply Reel
SMPS	Switch Mode Power Supply
SP	Standard Play
SS	Synch Separator
SW	Switch
TU REEL	Take Up Reel
TMB	Terminal Board
VCA	Voltage Controlled Amplifier
VCO	Voltage Controlled Oscillator
VCR	Video Cassette Recorder
VD	Supply Voltage Digital
VE	Voltage (Ever)
V_ENV	Video Envelope
V_IF	Video IF
VS	Voltage (Switched)
VM	Motor Voltage (Drum & Loading motor)
VMC	Motor Voltage (Capstan motor)
VPS	Video Program System
W/D	White/Dark
Y/C	Luminance/Chrominance

VIDEO RECORDER OVERVIEW - LOCALISATION DES ELEMENTS - GERÄTE EXPLOSIONSZEICHNUNG - VISIONE GENERALE DELL'APPARECCHIO - VISTA AMPLIADA DEL CONJUNTO


Mecha Deck securing screws
Mecha Deck Assembly
Tuner Board
Main Board
Capstan Belt
Key Display Board
Base Plate
Base Cover securing screw

GB 1. Service Notes

1.1 Disassembly

1.1.1 Top cover

a) Remove 5 securing screws (0300) from the back of the chassis frame (0010).
b) Slide the top cover backwards and gently lift off.

1.1.2 Front panel

a) Remove two securing screws (0230) from each side of the cassette housing.
b) Disengage the front panels four top securing tabs and the two bottom securing tabs.
c) Pull the frontpanel forwards and downwards to remove it.
Note: During re-installation of the front panel, the cassette door flap lever must be positioned behind the activator lever, on the right-hand side of the cassette holder (hold the flap in a hotizontal position while engaging the front panel).

1.1.3. Key Display Board.

a) Disconnect flat wire connectors BK014 and BK002.
b) Remove earth plate (0058M) attached to the left-hand side of the cassette holder.
c) Disengage three securing tabs on the upper edge of the PCB, tilt the KDB forwards and lift the PCB out of the main chassis.

1.1.4. Bottom Plate.

a) Remove the single fixing screw (0275).
b) Disengage the main chassis location clip from the bottom plate (a square cutout adjacent to the fixing screw).
c) Slide the bottom plate backwards and carefully lift off.

1.1.5. Main Assembly.

a) Remove the two front securing screws (0080) on each side of the mechadeck (0600).
b) Remove a single securing screw (0063M) adjacent to the power input socket.
c) Ensure that the mechadeck is in the loaded position.
d) Disengage the main chassis fixing frame tabs, two along the right-hand edge, one at the rear of the left-hand edge and four along the back panel.
e) Carefully lift out the main assembly from the chassis frame.

1.1.6. Mechadeck.

a) Disconnect flat wire connector at BT002A from the Cam Loading Motor assembly.
b) Disconnect flat wire connector at BS031A from the ACE head assembly.
c) Disengage the flat wire connector at BV001 on the Main Board from the Drum assembly.
d) Turnover the Main Assembly and place on a clean surface.
e) Remove the single securing screw (U501A) in the center of the mechadeck.
f) Remove the Drive Belt (B850).
g) Disengage the four plastic fixing tabs and carefully lift off the Main Board.

1.1.7. Back Panel.

a) Remove two SCART socket securing screws (0071M).
b) Carefully lift off the back panel.

1.1.8. Tuner Holder.

a) Remove single securing screw (0054).
b) Disengage the two plastic securing tabs and remove the tuner holder from the Tuner Module.

1.2. Service Adjustments.

1.2.1. KDB Software Set-up.

The hardware configuration used by the KDB processor is factory set and stored in an E2PROM, IT004. Therefore if IT004 is replaced, then the hardware configuration must be re-entered in the following manner:-
a) Disconnect the VCR from the mains supply.
b) Press and Hold the "-" and "+" keys on the front panel of the VCR and reconnected the mains supply (For VCR which do not have these keys use the "STOP", "PLAY" and "STANDBY" keys instead).
c) Release the "-" and "+" keys.
d) On the TV screen will be displayed a 14 digit number which represent the actual set-up values for the particular Brand/Model of VCR. These numbers can be found on page 2 of this Service Manual.
e) The first digit to be modified will flash, it's value can be incremented by pressing the number 1 key on the RCU in the range of 0 to F.
f) To select the next digit to be modified, press the number 2 key on the RCU. Once all 14 digits have be modified the first digit will again start to flash.
g) To STORE the new settings, press the "STOP" key on the RCU. It takes a few seconds to initialize the E2PROM, during this initialization period the display will remain dark.
h) To "EXIT" the Service Set-Up Mode without saving the new values, press the "EXIT or STANDBY" key on the RCU.
The "FAST-FORWARD" key on the RCU is used to select the second page of the Service Set-Up Mode, this page introduces the Auto Diagnostic functions which are explained in more detail in section 1.3.

Important Note:
After modifying the value of the 14 digit number in the Service Set-Up Mode, it is necessary to carryout the HEAD SWITCHING POINT adjustment procedure as detailed in section 1.2.2.

1.2.2. Head Switching Point.

a) Insert a protected alignment test cassette into the VCR.
The VCR will automatically enter the PLAYBACK mode.
b) When the VCR display shows "PLAY E - - - - ", press the "STATUS" key on the RCU.
c) Next simultaneously press the "+", "-" and "PLAY" keys on the front panel of the VCR.
The display will change to ADJ.
d) Allow the VCR to stay in the PLAYBACK mode for several seconds and then terminate the adjustment routine by pressing the "PLAY" key on the front panel of the VCR (see sub section 2.2.6. of the electrical adjustments on page 9 of this service manual).

1.2.3. 16MHz Clock Adjustment.

To compensate for 16MHz crystal and circuitry errors, "Offset" information is calculated and stored in the E2PROM. This information is produced by comparing the Video Sync signal frequency with the divided down 16mhz oscillator frequency, the adjustment procedure is as follows:-
This adjustment procedure must be carried without a cassette loaded in the VCR.
a) Connect a terrestrial aerial to the VCR and tune to a PAL/Secam 50Hz signal.
b) Next simultaneously press the "PLAY", "+" and "-"keys on the front panel of the VCR (or use service code 08H (Adr 02) form the Service RCU) to activate the adjustment procedure.
c) Wait for 30 seconds (for calculation and storage in the E2PROM), to terminate the adjustment procedure "insert" a video cassette and then eject the cassette.

1.3. Auto Diagnostic.

When a mechanical problem or operating error occurs, a 10 digit number representing the malfunction is stored in the E2PROM. This number will be displayed on the OSD TV screen when switching "ON" the VCR, when analyzed it will assist in finding a solution to the problem encountered.

1.3.1. Error Message Display.

There are two methods of displaying the error message, these are as follows:-
a) Enter the "SERVICE SET UP Mode" (see sub section 1.2.1. KDB Software Set Up) and press the >> FAST FORWARD << key on the RCU.
b) Whilst the VCR is in the "STANDBY" or "STOP" mode, press and hold the "ERASE" key on the RCU for approximately 10 seconds.

1.3.2. Interpretation of Error Message.

The meaning of the various error message code digits is given in the table below.

Number of digit	Meaning	Value
1 and 2	Target mechadeck and current mechadeck positions	1 - Wind 2 - Stop 3 - Standby 3 - Play 4 - Rev 5 - Loading/Unloading 6 - Off 7 - Eject F - Initial
3 and 4	Task servo is performing	00 - Stop 01 - FRew 02 - FF 04 - Play 11 - Rev 12 - Cue 44 - Record 84 - Still C4 - Rec Pause 40 - Rec/Rec P 10 - Search mode
5,6,7 and 8	Task active prior to abnormal off	bit 0
	Normal	0000
	Record	0001
	Step	0004
	Off	0008
	Eject	0010
	Stop	0020
	Capbrake	0040
	Initial	0080
	Endless Record	0200
	Endless Play	0400
	Continuous	0800
	Wind	1000
	Search	2000
	Still	4000
	Play	8000
9 and 10	Abnormal flags	81 - Drum 82 - Left Reel 84 - Right Reel 88 - Task incomplete

Ⓕ 1. Instructions de maintenance

1.1 Démontage

1.1.1 Coffret supérieur

a) Enlever les 5 vis (0300) de la façade arrière (0010).
b) Tirer le coffret supérieur légèrement vers l'arrière et le soulever.

1.1.2 Façade

a) Enlever les 2 vis (0230).
b) Dégager les 2 crochets du chassis, ainsi que les 4 de la façade.
c) Tirer la façade.

1.1.3 Platine de commandes (KDB)

a) Débrancher les connecteurs BK014 and BK002 de la KDB (0210).
b) Retirer le blindage (0058M) accroché à la mécanique.
c) Dégager les 3 crochets du dessus de la KDB, incliner la KDB vers l'avant et tirer pour la sortir du chassis.

1.1.4 Blindage inférieur

a) Enlever la vis (0275).
b) Appuyer sur les cotés du chassis en allant vers le bas (dans les ouvertures du blindages).
c) Faire glisser vers le bas et tirer le blindage (0260).

1.1.5 Ensemble platine principale

a) Enlever les 2 vis (0080) des cotés de la mécanique (0060).
b) Enlever la vis (0063M) près de l'alimentation.
c) S'assurer que la mécanique (0060) est en position chargée.
d) Dégager les 4 crochets du panneau arrière du chassis.
e) Dégager les 2 crochets du coté droit du chassis.
f) Dégager le crochet arrière gauche du panneau arrière.
g) Sortir la platine principale avec la mécanique.

1.1.6 Mécanique

a) Débrancher le cable (BT002A) de la platine moteur (B435).
b) Débrancher le cable (BS031A) de la tête ACE (G480).
c) Débrancher le connecteur (BV001) et sur la platine principale le cable HAB (BB03) du tambour.
d) Mettre l'ensemble platine principale (0050) le haut vers le bas.
e) Enlever la vis (U501A) au centre de la mécanique.
f) Enlever la couroie (B850).
g) Dégager les 4 crochets de la mécanique et soulever la platine principale.

1.1.7 Panneau arrière

a) Enlever les 2 vis (0071M) du cache arrière.
b) Soulever le cache arrière.

1.1.8 Support tuner

a) Enlever la vis (0054) du support tuner.
b) Dégager les 2 crochets du support tuner du tuner (0010M).
c) Tirer le support tuner.

1.2 Réglages du mode service

1.2.1 Mode service platine KDB

Il est nécessaire d'informer le microprocesseur de la configuration en présence. Cela est effectué en usine et les valeurs sont stockées dans l'EEPROM.
1. Déconnecter le magnétoscope du secteur.
2. Maintenir pressées les touches «-» et «+» et connecter le magnétoscope au secteur. (Pour ceux ne disposant pas de ces touches, utiliser les touches «STOP», «PLAY» et «STANDBY»).
Relacher les touches «-» et «+».
Sur l'écran (OSD), 14 digits indiquent les valeurs du mode service. Presser 1,3,4,5,6,7,8,9,0 pour augmenter la valeur de 0 to F et presser 2 pour aller au numéro suivant.
Dans ce mode SERVICE SET UP, certaines valeurs peuvent être entrées en fonction des caractéristiques spécifiques. Le nombre de 14 chiffres correspondant à votre appareil est donné dans le tableau page 2. Le digit à valider clignote à l'écran. Les entrées sont faites par les touches de la télécommande. Après l'entrée des 14 digits, le premier digit clignote de nouveau. Mémoriser les nouvelles valeurs en pressant la touche STOP de la télécommande. Vous pouvez également quitter le mode SERVICE SET UP sans mémoriser les nouvelles valeurs. Pour ce faire, presser la touche « E » ou « OFF » de la télécommande.
Si vous avez decidé de mémoriser les nouveaux réglages, il peut s'écouler quelques secondes pour initialiser l'EEPROM. Pendant ce temps, l'affichage reste noir.
La touche AVANCE RAPIDE (>>) est utilisée pour accéder à la seconde page du mode Service.Cette page introduit la fonction «Auto diagnostique». Vous trouverez plus de détails à cè sujet dans le paragraphe 1.3.

Note importante :
Après la modification des valeurs du mode Service, un nouveau réglage du point de commutation des têtes est nécessaire.

1.2.2 Point de commutation des têtes

Introduire une cassette test protégée dans le magnétoscope. Le mode lecture est automatiquement positionné. Lorsque l'affichage indique «LECT. E---» presser la touche «STATUS» sur la télécommande. Presser ensuite, simultanément, les touches «+»,«-» puis «LECT» sur la façade (Maintenir ces trois touches pressées). l'affichage indique "ADJ". Le magnétoscope va rester en mode LECT. . Après quelques secondes, arrêter le réglage en pressant sur la touche «LECT» de la façade. (Voir § 2.2.4 des réglages électriques)

1.2.3 Ajustement de l'horloge de 16 MHz

Pour compenser la tolérance du quartz de 16 MHz, l'information de compensation est mémorisée dans l'EEPROM. L'ajustement est réalisé par comparaison de la fréquence d'horloge de 16 MHz avec le la fréquence du signal Sync. Vidéo. La valeur de compensation sera mémorisée dans l'EEPROM.
Connecter l'antenne à l'entrée du tuner et ajuster sur un canal PAL/Secam avec un signal de 50 Hz. Vérifier qu'aucune cassette n'est introduite dans le magnétoscope. Presser les touches « PLAY », « + » and « - ». Ou utiliser le code 08H (Adr 02) du mode service de la télécommande. L'écran VFD indique "-ADJ", le réglage est activé. Attendre 30 secondes (pour calculer et mémoriser dans l'EEPROM). Insérer une cassette pour arrêter le processus et éjecter la cassette.

1.3 Auto diagnostique

Lorsqu'il se produit un incident mécanique où suite à une erreur de manipulation, un nombre de 10 chiffres representant ce mauvais fonctionnement est mémorisé dans l'EEPROM.
L'affichage à l'écran de ce nombre peut permettre, par son analyse, de résoudre le problème rencontré.

1.3.1 Affichage du message d'erreur

Le message d'erreur peut être affiché de 2 façons :
a) Lorsque la page «SERVICE SETUP» est affiché à l'écran, appuyer sur la touche Avance Rapide «>>» de la télécommande.
b) En **mode STOP ou STANDBY**, lorsqu'il n'y a aucun affichage sur l'écran du téléviseur, appuyer sur la touche ERASE pendant au moins 10 secondes.

1.3.2 Interprétation du message d'erreur

La signification des différents chiffres composant le message d'erreur est donnée dans le bureau ci-après.

Numéro du digit	Signification	Valeur
1 et 2	**Fonction demandée et position de la mécanique au moment de l'incident**	**1 - Av. ou Ret. rapide 2 - Stop 3 - Standby 3 - Lect. 4 - Lect. Ar. 5 - Charg ./ Décharg. 6 - Arrêt (en butée déchargé) 7 - Eject. F - Initialisation**
3 et 4	**Fonction réalisée par le µP (Gestion / Asserv.)**	**00 - Stop 01 - Retour rapide 02 - Avance rapide 04 - Lect. 11 - Lect Ar. 12 - Rech. / Lect. 44 - Enreg. 84 - Arrêt sur image C4 - Pause Enreg. 40 - Enreg./Pause Enreg. 10 - Recherche**
5,6,7 et 8	**Fonction en cours avant anomalie**	**bit 0**
	Normal	**0 0 0 0**
	Enreg.	**0 0 0 1**
	Image / image	**0 0 0 4**
	Arrêt (en butée déchargé)	**0 0 0 8**
	Eject.	**0 0 1 0**
	Stop	**0 0 2 0**
	Frein de cabestan	**0 0 4 0**
	Initialisation	**0 0 8 0**
	Enreg. en boucle	**0 2 0 0**
	Lect. en boucle	**0 4 0 0**
	Enreg. ou Lect. en boucle	**0 8 0 0**
	Av. ou Rect. rapide	**1 0 0 0**
	Recherche	**2 0 0 0**
	Arrêt sur image	**4 0 0 0**
	Lect.	**8 0 0 0**
9 et 10	**Indication de l'anomalie**	**81 - Tambour 82 - Porte bobine gauche 84 - Porte bobine droit 88 - Fonction incomplète**

D 1. Service-Hinweise

1.1 Demontage des Gerätes

1.1.1 Gehäuse

a) 5 Schrauben an der Rückseite des Gerätes herausdrehen.
b) Das Gehäuseoberteil leicht nach hinten ziehen und anheben.

1.1.2 Frontblende

a) Die beiden Schrauben herausdrehen.
b) Die beiden Kunststoffzungen an der Bodenplatte und 4 Kunststoffzungen von der Frontblende anheben.
c) Frontblende abnehmen.

1.1.3 Bedienteil-Platte

a) Die Stecker BK014 und BK002 herausziehen.
b) Die an der Mechanik befestigte Masseplatte abnehmen.
c) Die drei Kunststoffzungen oben auf der Bedienteil-Platte anheben und die Platte nach vone/oben aus dem Chassis nehmen.

1.1.4 Bodenplatte

a) Die Schraube herausdrehen.
b) Die Verriegelung des Chassis nach unten drücken (in der viereckigen Öffnung der Bodenplatte).
c) Die Bodenplatte nach hinten drücken und herausziehen.

1.1.5 Versorgungsteil

a) Die beiden Schrauben an beiden Seiten der Mechanik herausdrehen.
b) Die Schraube neben dem Netzanschluß herausdrehen.
c) Sicherstellen, daß sich die Bedienteil-Platte in Ladeposition befindet.
d) Die vier Kunststoffzungen der Rückplatte des Chassis anheben.
e) Die zwei Kunststoffzungen der rechten Seitenplatte des Chassis anheben.
f) Die Kunststoffzunge am hinteren linken Ende der Rückplatte anheben.
g) Das Versorgungsteil mit der Mechanik herausziehen.

1.1.6 Hauptleiterplatte komplett mit Laufwerk

a) Das Kabel BT002A von der Antriebsmotorplatte trennen.
b) Das Kabel BS031A vom ACE-Kopf trennen.
c) Den Anschluß BV001 (Kopftrommel) des HAB-Kabels BB03 von der Hauptplatine trennen.
d) Den Versorgungsteil auf den Kopf stellen.
e) Die Schraube in der Mitte der Mechanik herausdrehen.
f) Den Antriebsriemen entfernen.
g) Die vier Kunststoffzungen der Mechanik anheben und Hauptplatine herausheben.

1.1.7 Rückplatte

a) Die beiden Schrauben der Rückplatte herausdrehen.
b) Die Rückplatte abnehmen.

1.1.8 Tuner-Halterung

a) Die Schraube der Tuner-Halterung herausdrehen.
b) Die beiden Kunststoffzungen der Tuner-Halterung am Tuner anheben.
c) Die Tuner-Halterung herausziehen.

1.2 Service-Einstellungen

1.2.1 Einrichten der Bedienteil-Software

Es ist notwendig, dem Bedienteil-Prozessor die vorhandende Hardware-Konfiguration anzugeben. Diese wird im Werk vorgenommen und im EEPROM abgespeichert.
1. Den Videorecorder vom Netz trennen.
2. Die Tasten „-“ und „+“ gedrückt halten und dabei den Videorecorder am Netz anschließen. (Sind diese Tasten nicht vorhanden, sind „STOP», „PLAY“ und „STANDBY“ an deren Stelle au verwenden.)
Die Tasten „-“ und „+“ loslassen.
Auf dem TV-Schirm werden 14 Ziffern angezeigt, welche die aktuellen Voreinstellungen angeben.
Die Tasten1, 3, 4, 5, 6, 7, 8, 9, 0 drücken, um den Service-Datenwert von 0 zu F zu erhöhen, und 2 drücken, um zur nächsten Nummer überzugehen.
In diesem Service-Einrichtungsmodus können einige dem Videorecordertyp entsprechende Einstellungen vorgenommen werden. Die Ihrem Gerät entsprechende Nummer aus 14 Ziffern finden Sie in der Tabelle auf Seite 3. Die jeweils einzustellende Ziffer blinkt auf dem Bildschirm. Die Eingabe erfolgt mit den Tasten der Fenbedienung. Nachdem alle 14 Ziffern eingegeben wurden, blinkt wieder die erste Ziffer. Zum Abspeichern der neuen Einstellungen drücken Sie die Taste „STOP“ der Fernbedienung. Sie können den Service-Modus auch ohne Abspeichern verlassen. Zu diesem Zweck drücken Sie die Taste „E“ oder „OFF“ der Fernbedienung.
Wenn Sie die neuen Werte abgespeichert haben, dauert es einige Sekunden, bis diese in das EEPROM geschrieben sind. Während dieser Zeit bleibt die Anzeige dunkel.
Mit der Taste „Schneller Vorlauf“ gelangt man zur Seite 2 des Service-Modus. Diese Seite enthält die Funktion Auto Diagnose. Näheres dazu finden Sie im Abschnitt 1.3.

Wichtiger Hinweis:
Nach den Einstellungsänderungen im Service-Mode ist es erforderlich, den Kopftrommel-Umschaltpunkt neu zu setzen.

1.2.2 Kopf-Trommel-Umschaltpunkt

Legen Sie eine schreibgeschützte Meßkasette in das Videogerät. Die Wiedergabe startet automatisch. Wenn «START. E---» angezeigt wird, drücken Sie die «STATUS» Taste auf der Fernbedienung. Drücken Sie gleichzeitig die Tasten «+», «-» danach «PLAY» auf der Frontseite (Halten Sie die drei Tasten fest). Es wird “EINST.“ angezeigt. Das Videogerät bleibt im Wiedergabebetrieb. Beenden Sie nach eingen Sekunden diese Einstellung durch Drücken von «PLAY» auf der Frontseite.
(Sehen Sie unter §2.2.4 betr. der elektrischen Einstellungen nach)

1.2.3 Einstellung der 16 Mhz-Uhr

Zur Toleranzkompensierung des 16 Mhz-Quarzes werden im EEPROM Zeitdifferenzinformationen gespeichert. Die Einstellung erfolgt durch Vergleich der heruntergeteilten 16 Mhz mit der Video Sync. Die Differenz wird im EEPROM abgelegt.
Schließen Sie die Antenne am Tunereingang an und stellen Sie einen PAL/Secam-Kanal ein. Überprüfen Sie, daß der Kassettenschacht leer ist. Drücken Sie die Tastenkombination „PLAY“, „+“ und „-“. Oder verwenden Sie den Service-Code 08H (Adr 02) an der Fernbedienung. Auf der VFD-Anzeige erscheint
„-ADJ“, und die Einstellung ist aktiviert. Warten Sie 30 Sekunden (für die Berechnung und das Abspeichern auf dem EEPROM). Legen Sie zum Stoppen des Vorgangs eine Kassette ein und werfen Sie diese wieder aus.

1.3.1 Anzeige einer Fehlermeldung

Die Fehlermeldung kann auf 2 Arten erfolgen:

a) Wenn die Seite «SERVICE EINSTELLUNGEN» auf dem Schirm ist, drücken Sie «<< Schneller Vorlauf «>>» auf der Fernbedienung.

b) Im **STOP oder STANDBY Modus**, wenn keine Anzeige auf dem Schirm ist, drücken Sie mindestens 10 Sekunden auf LÖSCHEN.

1.3.2 Interpretation der Fehlermeldung

Die Bedeutung der verschiedenen Ziffern, welche die Fehlermeldung darstellen, wird in nachstehender Tabelle gegeben.

Ziffer	Bedeutung	Wert
1 und 2	Ziel-Hauptleiterplatte und deren aktuelle Einstellungen	1 - Aufspulen 2 - Stop 3 - Standby 3 - Wiedergabe 4 - Rev 5 - Laden/Entladen 6 - Ausschalten 7 - Auswerfen F - Anfang
3 und 4	Ausgeführte Servo-Funktion	00 - Stop 01 - Schneller Rücklauf 02 - Schneller Vorlauf 04 - Wiedergabe 11 - Rev 12 - Cue 44 - Aufnahme 84 - Standbild C4 - Aufnahmepause 40 - Aufn./Aufn.pause 10 - Suchlauf
5, 6, 7 und 8	Funktion vor außsergrwöhnlichem Ausschalten	bit 0
	Normal	0 0 0 0
	Aufnahme	0 0 0 1
	Schritt	0 0 0 4
	Aus	0 0 0 8
	Auswurf	0 0 1 0
	Stop	0 0 2 0
	Capbrake	0 0 4 0
	Anfang	0 0 8 0
	Endlosaufnahme	0 2 0 0
	Endloswiedergabe	0 4 0 0
	Fortlaufend	0 8 0 0
	Aufspulen	1 0 0 0
	Suchlauf	2 0 0 0
	Standbild	4 0 0 0
	Wiedergabe	8 0 00
9 und 10	Außergewöhnliche Indikatoren	81 - Trommel 82 - Linke Spule 84 - Rechte Spule 88 - Funktion nicht beendet

Ⓘ 1. Note di servizio

1.1 Disassemblaggio

1.1.1 Coperchio superiore

a) Togliere le 5 viti ubicate sulla parte posteriore del VR.
b) Far scorrere in avanti il coperchio e sollevarlo delicatamente.

1.1.2 Pannello frontale

a) Svitare le due viti.
b) Liberare i due ganci inferiori e i quattro ganci superiori del frontale.
c) Estrarre il frontale.

1.1.3 Key Display Board

a) Scollegare i connettori BK014 e BK002 del Key Display Board.
b) Rimuovere il collegamento di massa con la meccanica.
c) Liberare i tre ganci superiori del KDB, togliere la piastra dopo averla spostata verso l'alto.

1.1.4 Coperchio inferiore

a) Togliere la vite.
b) Premere verso il basso la nervatura del telaio (intemamente all'apertura quadrata).
c) Far scorrere verso il basso e togliere il coperchio inferiore.

1.1.5 Insieme piastra principale e meccanica

a) Togliere le due viti poste ai lati della meccanica.
b) Togliere la vite vicina alla presa di alimentazione.
c) Accertarsi che la piastra meccanica sia in posizione di caricamento.
d) Liberare i quattro ganci del pannello posteriore dal telaio.
e) Liberare i due ganci sul lato destro dal telaio.
f) Liberare il gancio sulla parte inferiore sinistra del pannello posteriore.
g) Rimuovere l'insieme piastra principale con meccanica.

1.1.6 Meccanica

a) Scollegare il connettore BT002A del motore funzione controllo.
b) Scollegare il connettore BS031A della testina ACE.
c) Sganciare il connettore BV001 tra la piastra principale e il cavo HAB (BB03) del tamburo testine.
d) Capovolgere l'insieme piastra principale / meccanica.
e) Togliere la vite al centro della piastra meccanica.
f) Rimuovere la cinghia motore.
g) Liberare i quattro ganci della meccanica e sollevare la piastra principale.

1.1.7 Pannello posteriore

a) Togliere le due viti del pannello posteriore.
b) Sollevare il pannello posteriore.

1.1.8 Supporto del Tuner

a) Togliere la vite del supporto del Tuner.
b) Liberare i due ganci del supporto del Tuner.
c) Estrarre il supporto del Tuner.

1.2 Regolazioni di servizio

1.2.1 Impostare il software KDB

È necessario informare il processore KDB del tipo di configurazione hardware presente. Ciò viene effettuato in fabbrica e le selezioni sono memorizzate nella EEPROM.
1. Scollegare il VTR dalla rete.
2. Premere i tasti i tasti "-" e "+" e collegare il VTR alla rete (sui VCR privi di questi tasti utilizzare invece i tasti "STOP", "PLAY" e "STANDBY").
Rilasciare i tasti "-" e "+".
Sullo schermo OSD (On Screen Display) vengono visualizzate 14 cifre, che rappresentano i valori di impostazione (setup) attuali.
Premere 1, 3, 4, 5, 6, 7, 8, 9, 0 per aumentare il valore dei dati da 0 a F e premere 2 per andare al numero successivo.
In SERVICE SET UP si possono immettere alcuni valori in funzione alle caratteristiche del VR. Il numero composto da 14 cifre che corrisponde al vostro apparecchio viene riportato nella tabella a pag. 3. La cifra sulla quale è possibile intervenire è quella lampeggiante. L'immissione dei dati avviene mediante i tasti del telecomando. Dopo aver immesso tutte le 14 cifre, lampeggerà di nuovo la prima cifra. Memorizzate le nuove regolazioni premendo il tasto STOP sul telecomando. È inoltre possibile uscire dal SERVICE SET UP senza memorizzare le nuove regolazioni. Per fare ciò, premere i tasti "E" oppure "OFF" del telecomando.
Se avete deciso di memorizzare i nuovi parametri, attendere alcuni secondi per l'inizializzazione della EEPROM. Durante questo tempo il Display rimarra buio. Il tasto "FAST FORWARD" viene utilizzato per passare alla seconda pagina del Service Mode. Questa pagina di "Auto diagnosi", viene spiegata dettagliatamente nel paragrafo 1.3.

Importante:
Dopo aver modificato le regolazioni del Service Mode si rende necessaria la regolazione "HEAD SWITCHING POINT" punto di commutazione delle testine.

1.2.2 Punto commutazione testine

Inserire une cassetta test protetta nel videoregistratore. Il VR commuta automaticamente in riproduzione. Quando viene visualizzato il messagio "PLAY. E", premere il tasto STATUS sul telecomando. Premere poi contemporaneamente i tasti "+","-" e quindi il tasto PLAY sul frontale (mantenere premuti questi tre tasti per alcuni secondi). Il display visualizza "ADJ". Il videoregistratore resterà in riproduzione. Dopo alcuni secondi, concludere la regolazione premendo il tasto "PLAY" sul frontale. (Vedere §2.2.4 relavito alle regolazioni elettriche).

1.2.3 Regolazione dell clock o 16 Mhz

Serve a compensare la tolleranza del quarzo. La relativa informazione viene memorizzata nella EEPROM. La regolazione viene effettuata confrontando la frequenza, opportunamente divisa, del quarzo o 16MHz con la frequenza del sincronismi video. Il valore di compensazione viene memorizzato nella posizione EEPROM.
Collegare l'entrata antenna al Tuner e sintonizzarsi su un canale PAL/Secam a 50Hz. Controllare che il vano cassetta sia vuoto. Premere i tasti "PLAY", "+" e "-" oppure utilizzare il codice di servizio 08H (Adr 02) del telecomando di servizio. Quando il display indica "-ADJ" la regolazione è attivata. Attendere 30 secondi (per il calcolo e la memorizzazione nella EEPROM). Inserire una cassetta per interrompere la procedura di regolazione e quindi togliere la cassetta.

1.3 Auto diagnosi

Quando si verifica un problema meccanico oppure un errore di utilizzo viene memorizzato nella EEPROM un numero di 10 cifre corrispondente al malfunzionamento.
Dall'analisi di tale numero sullo schermo si possono ricavare importanti indicazioni utili per la riparazione.

1.3.1 Visualizzazione del messagio di errore

Il messaggio di errore può essere visualizzato nei due modi seguenti:
a) Quando lo schermo visualizza la pagina «SERVICE SETUP», premere il tasto "Avanzamento Veloce" del telecomando.
b) In STOP o STANDBY, quando sullo schermo del televisore non è visualizzato alcun messagio, premere il tasto ERASE e mantenerlo premuto per almeno 10 secondi.

1.3.2 Significato del messagio di errore

Il significato delle varie cifre che costituiscono il messagio di errore viene spiegato nella tabella successiva.

Numero di cifre	Significato	Valore
1 e 2	Obiettivo della meccanica e attuale posizione meccanica	1 - Wind
		2 - Stop
		3 - Standby
		3 - Play
		4 - Rev
		5 - Caricare/Scaricare
		6 - Off
		7 - Eject
		F - Iniziale
3 e 4	Compito servo in esecuzione	00 - Stop
		01 - FRew
		02 - Fast Forward
		04 - Play
		11 - Rev
		12 - Cue
		44 - Record
		84 - Still
		C4 - Rec Pause
		40 - Rec/Rec P
		10 - Search mode
5,6,7 e 8	Funzione altiva prima dell'anomalia	bit 0
	Normale	0 0 0 0
	Record	0 0 0 1
	Step	0 0 0 4
	Off	0 0 0 8
	Eject	0 0 1 0
	Stop	0 0 2 0
	Capbrake	0 0 4 0
	Iniziale	0 0 8 0
	Registrazione infinita	0 2 0 0
	Riproduzione infinita	0 4 0 0
	Continuato	0 8 0 0
	Wind	1 0 0 0
	Search	2 0 0 0
	Still	4 0 0 0
	Play	8 0 0 0
9 e 10	Indicazione anomalia	81 - Tamburo
		82 - Bobina sinistra
		84 - Bobina destra
		88 - Compito non completato

Ⓔ Instrucciones para Servicio Tecnico

1.1 Desmontaje

1.1.1 Cubierta superior

a) Extraiga los 5 tornillos de la parte trasera del chasis
b) Deslice el chasis hacia atrás y levante la cubierta

1.1.2 Panel frontal

a) Extraiga los dos tornillos.
b) Libere los dos clips de la parte inferior y los cuatro de la parte superior del panel frontal.
c) Saque el panel frontal.

1.1.3 Placa de visualización KDB

a) Desconecte los conectores BK014 y BK002 de la tarjeta Key Display
b) Extraiga la placa del mechadeck
c) Libere los dos clips de la parte superior del KDB, incline la KDB hacia adelante y saque la KDB del chasis.

1.1.4 Placa de la parte inferior

a) Extraiga los tornillos.
b) Pulse el clip del marco del chasis hacia abajo (apertura cuadrada interna de la placa inferior)
c) Deslice hacia abajo y saque la placa inferior.

1.1.5 Extracción de placa principal

a) Extraiga los dos tornillos a ambos lados de la platina mecánica
b) Extraiga los tornillos cerca de la toma de corriente
c) Compruebe que la mecánica está en posición de carga
d) Libere los cuatro clips del panel trasero del chasis
e) Libere los dos clips del lado derecho del chasis
f) Libere un clip del extremo posterior izquierdo del panel trasero.
g) Saque la placa principal con la platina mecánica

1.1.6 Platina mecánica

a) Desconecte el cable (BT002A) de la placa del motor de la unidad
b) Desconecte el cable (BS031A) de la cabeza ACE.
c) Desconecte el conector (BV001) en la placa principal al cable HAB (BB03) del tambor.
d) Coloque la placa principal boca abajo
e) Extraiga el tornillo del centro de la platina mecánica
f) Extraiga la correa de conducción
g) Libere los 4 clips de la platina principal y levante la placa central

1.1.7 Panel posterior

a) Extraiga los dos tornillos del panel posterior
b) Levante el panel posterior

1.1.8 Portasintonizador

a) Extraiga los tornillos del portasintonizador
b) Libere los dos clips del portasintonizador al sintonizador
c) Saque el sintonizador.

1.2 Ajustes de servicio técnico

1.2.1 Configuración del software KDB

Es obligatorio informar al procesador KDB de la configuración de hardware existente. La configuración viene de fábrica y las selecciones se almacenan en el EEPROM.
1. Desenchufe el VTR de la corriente.
2. Mantenga pulsadas las teclas "-" y "+" y enchufe el VTR a la corriente. (Si el vídeo no tiene estas teclas, use las teclas "STOP", "PLAY" y "STANDBY")
Suelte las teclas "-" y "+"
En la visualización en pantalla OSD (On-Screen Display) aparecen 14 dígitos que representan los valores de configuración reales.
Pulse 1,3,4,5,6,7,8,9,0 para aumentar el valor de datos de servicio de 0 a F y pulse 2 para pasar al número siguiente.
En este modo de configuración de servicio técnico (SERVICE SETUP), se pueden efectuar algunas configuraciones específicas de tipo VTR. El número de 14 dígitos que corresponde a su aparato se indica en la tabla de la página 3. El dígito real para su introducción parpadea en la pantalla. Las introducciones se realizan con las teclas del mando a distancia. Una vez introducidos la totalidad de los 14 dígitos, el primer dígito parpadeará de nuevo. Guarde la nueva configuración pulsando la tecla STOP del mando a distancia.
También podrá salir del modo SERVICE SET-UP sin guardar las nuevas configuraciones. Para ello, pulse la tecla "E" u "OFF" del mando a distancia.
Si ha decidido guardar las nuevas configuraciones, la inicialización del EEPROM puede tardar algún tiempo. Durante este periodo el display permanecerá oscuro.
La tecla "FAST FORWARD" se usa para pasar a la segunda página del modo Servicio técnico. Esta página introduce la función de autodiagnóstico, consulte el párrafo 1.3 para más información sobre esta función.

Nota importante: Tras la modificación de las configuraciones en el modo servicio técnico, es necesario ajustar de nuevo el punto de conmutación de cabeza (HEAD SWITCHING POINT).

1.2.2 Punto de commutación de cabeza

Introducir una cinta patrón protegido en la videograbadora. El modo lectura se posiciona automáticamente. Cuando el visualizador indique «PLAY E---» pulse la tecla «STATUS» en el mando a distancia. Enseguida pulsar simultáneamente las teclas «+»,«-» y después «PLAY» en el frontal (Mantener estas tres teclas pulsadas). El visualizador indica «ADJ». El VCR permanecerá en modo PLAY. Después de algunos segundos, interrumpir el ajuste pulsando tecla «PLAY» en el panel frontal. (Véase el punto 2.4.6, de ajustes eléctricos).

1.2.3 Ajuste del reloj de 16 Mhz

Para compensar la tolerancia de cristal de 16 Mhz, se guarda información de Offset en el EEPROM. El ajuste se efectúa comparando la división de frecuencia del reloj de 16 Mhz y la frecuencia de señal de Video Sync. El valor de offset se guardará en el emplazamiento de EEPROM.
Conecte la entrada de antena al sintonizador y sintonice un canal PAL/Secam con señal de 50 Hz. Compruebe que no hay ninguna cinta dentro. Pulse "PLAY" y la combinación de teclas "+" y "-", o use el código de servicio 08H (Adr 02) del mando a distancia de servicio. La visualización VFD muestra "-ADJ" para indicar que el ajuste está activado. Espere 30 segundos (para calcular y guardar en el EEPROM). Inserte un casete para detener el proceso y expulsar el casete

1.3 Auto diagnóstico

Cuando se produce un incidente mecánico o después de un error de manipulación, se memoriza en la EEPROM un número de 10 cifras que representa este mal funcionamiento.
El análisis de este número visualizado en el pantalla puede permitir resolver el problema encontrado.

1.3.1 Visualización del mensaje de error

El mensaje de error puede ser visualizado de 2 maneras:
a) Cuando se visualiza en el pantalla la página «SERVICE SETUP», pulsar la tecla Avance Rápido «>>» del mando a distancia.
b) En **modo STOP o STANDBY**, cuando no hay ninguna visualización en el pantalla del televisor, pulsar la tecla ERASE durante 10 segundos por lo menos.

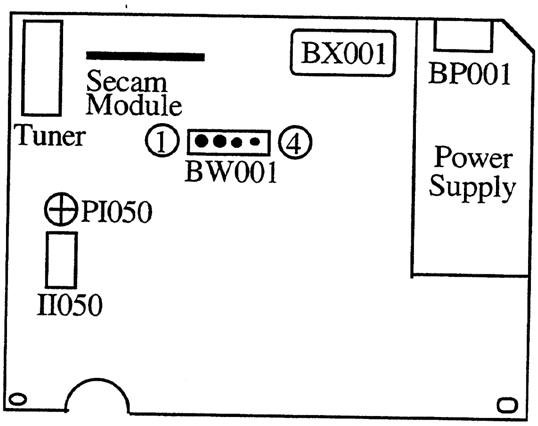
1.3.2 Interpretación del mensaje de error

En el cuadro siguiente se entrega la significación de las diferentes cifras que componen el mensaje de error.

Número de dígito	Significado	Valor
1 y 2	Función solicitada y posición de la mecánica en el momento del fallo	1- Avance 2. Stop 3. Standby 3. Play 4. Rev 5. Carga/Descarga 6. Off 7. Expulsar F. Inicial
3 y 4	Tarea servo ejecutándose	00. Stop 01. Frew 02. FF 04. Play 11. Rev 12. Cue 44. Record 84. Still C4. Rec Pause 40. Rec/Rec P 10. Modo búsqueda
5,6,7 y 8	Tarea activa antes de parada anormal	bit 0
	Normal	0 0 0 0
	Record	0 0 0 1
	Step	0 0 0 4
	Off	0 0 0 8
	Eject	0 0 1 0
	Stop	0 0 2 0
	Freno del capstan	0 0 4 0
	Initial	0 0 8 0
	Grabación infinita	0 2 0 0
	Lectura infinita	0 4 0 0
	Contínuo	0 8 0 0
	Avance	1 0 0 0
	Búsqueda	2 0 0 0
	Parada	4 0 0 0
	Lectura	8 0 0 0
9 y 10	Indicación de la anomalía	81. Tambor 82. Bobina izquierda 84. Bobina derecha 88. Tarea incompleta

2. Electrical adjustments - Réglages électriques - Elektrische Einstellungen - Regolazioni elettriche - Ajustes eléctricos

2.1. Test points and adjustment overview - Emplacement des points test et des réglages - Testpunkt- und Abgleich-Übersicht - Punto test e visione d'insieme delle regolazioni - Punto de prueba y emplazamientos de los ajustes



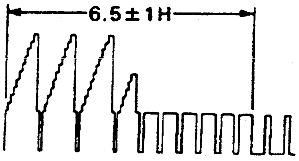
2.2. On screen display (Main board) - OSD: Affichage sur l'écran (Platine principale) - OSD: Hauptleiterplatte - OSD: Visualizzazione su Schermo - OSD: Visualización en la pantalla

N°	Item	Mode & signal	Test equipment	Test point	Description
2.2.1	OSD chroma oscillator		Frequency counter	RT103	Check for 17.734475MHz±650Hz

2.3. Audio signal processing (Main board) - Traitement audio (Platine principale) - Audio Signalverarbeitung - Elaborazione segnale audio - Procesamiento audio

N°	Item	Mode & signal	Test equipment	Test point	Description
2.3.1	Bias oscillator frequency & level	REC (without signal)	Oscilloscope	BS030 pin1-2	Check for 70KHz±4KHz 40Vpp±4V
2.3.2	Bias current	REC (without signal)	Oscilloscope	IS001 pin17-7	Check for 1.4Vpp±0.2V (~) 500±50mVrms $I = V_{PIN17(V_{RMS})}/(RS012+RS013)\Omega$

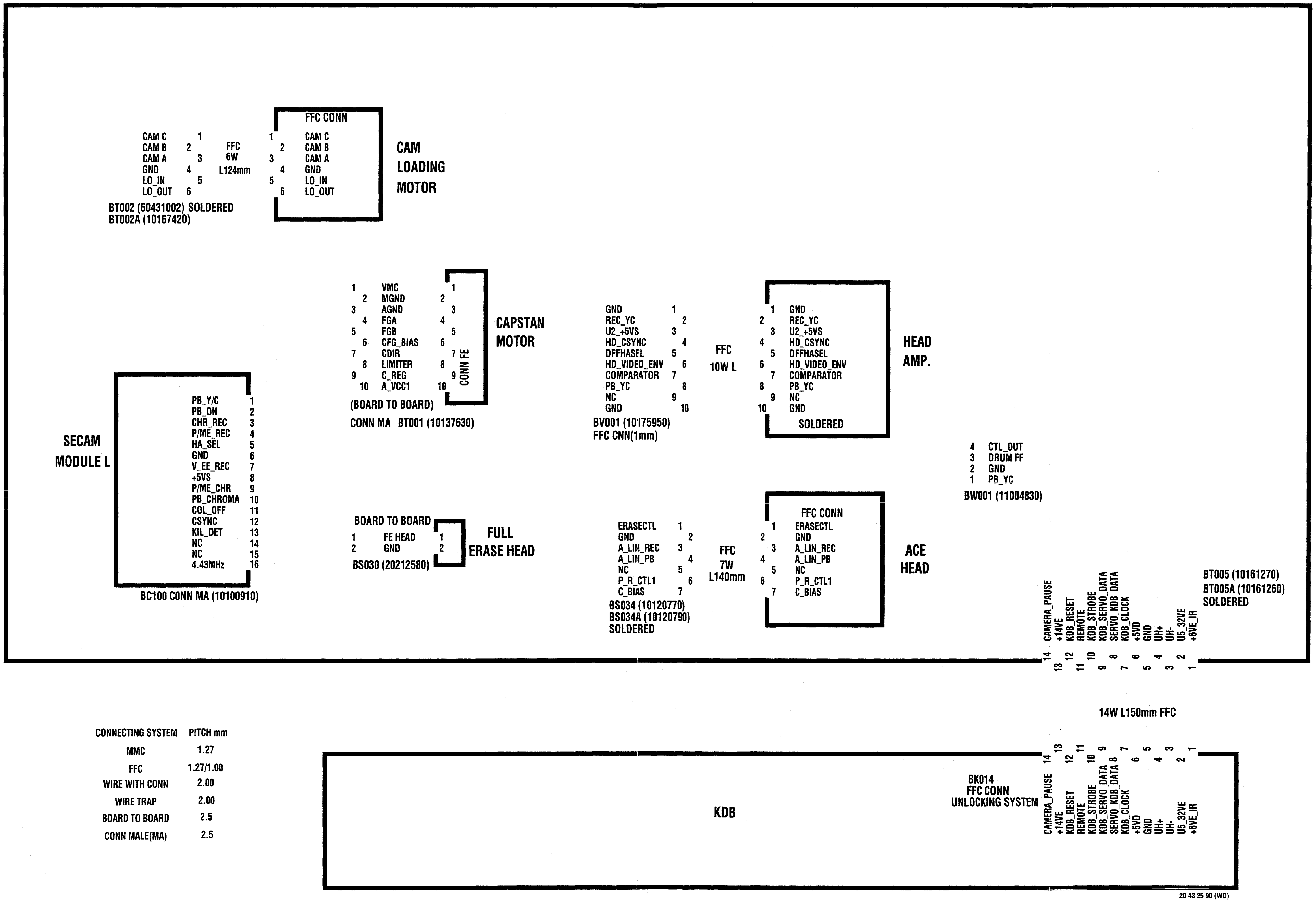
2.4. Measurements Servo Part - Vérifications sur les circuits d'asservissements - Messungen Servoteil - Controlli parte Servo - Verificaciones para parte Servo

N°	Item	Mode & signal	Test equipment	Test point	Description
2.4.1	Oscillator frequency		Frequency counter	IT001 pin 63	Check for 8.0MHz±1250Hz
2.4.2	5V Regulated		Voltmeter	IT001 pin 64	Check for 5.1V±0.3V
2.4.3	Drum FF	PB /REC (SP)	Frequency counter	IT001 pin 89	Check for 40ms±10µs
2.4.4	Capstan FG	PB /REC (SP)	Frequency counter	IT001 pin 44	Check for f= 757Hz±10Hz
2.4.5	CTL signal	PB /REC (SP)	Oscilloscope	IT001 pin 46	Check for f= 25Hz, U= 5Vpp
2.4.6	Head switching point	PB	Dual trace Oscilloscope Trigger ext. BW001 (Drum FF)	BX001 pin 19	1. Insert alignment test cassette. 2. When the display shows «PLAY E----» press the STATUS key on remote control. 3. Press «+» , «-» and «PLAY». 4. Display shows «ADJ». 5. Confirm that head switching point is 6.5 H ± 0.5H before vert. synchro. 6. Stop the adjustment by pressing Play key on the front panel. 

2.5. Video signal processing (Main board) - Traitement video (Platine principale) - Video Signalteil - Elaborazione segnale video - Tratamiento video

N°	Item	Mode & signal	Test equipment	Test point	Description
2.5.1	CVBS EE level	REC PAL grey scale 1Vpp (BX001 pin20)	Oscilloscope	BX001 pin19	Check for VBS = 1.0±0.05Vpp Burst = 300±40mVpp
(Not for all sets)		REC SECAM colour bar (BX001 pin20)	Oscilloscope	BX001 pin 19	Check for magenta bar = 210±20mVpp
2.5.2	White clip and dark clip	REC PAL video signal with 100% white-black (BX001 pin20)	Oscilloscope	IV001 pin 37	Check for white clip = 195%±15% Dark clip = 60%±10%
2.5.4	FM Record current	REC PAL mode (BX001 pin20)	Oscilloscope	TV008 emitter	Check recording level=150mVpp
2.5.5	Y Playback level	PB PAL FM signal modulated with 100% grey scale (BV001 pin8)	Oscilloscope	BX001 pin 19	Check Y playback level = 1.0±0.05Vpp
(Not for all sets)		NTSC PB FM signal modulated with 100% grey scale (BV001 pin8)	Oscilloscope	BX001 pin 19	Check Y playback level = 1.0±0.05Vpp
2.5.6	Chroma playback level	PB PAL FM signal modulated with colour bar (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for PAL burst = 210±40mVpp
(Not for all sets)		PB SECAM FM signal modulated with full field magenta (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for magenta bar= 180±25mVpp
(Not for all sets)		PB NTSC FM signal modulated with colour bar (BV001 pin8)	Oscilloscope	BX001 pin 19	Check for PAL burst= 195±30mVpp (NTSC on PAL mode)

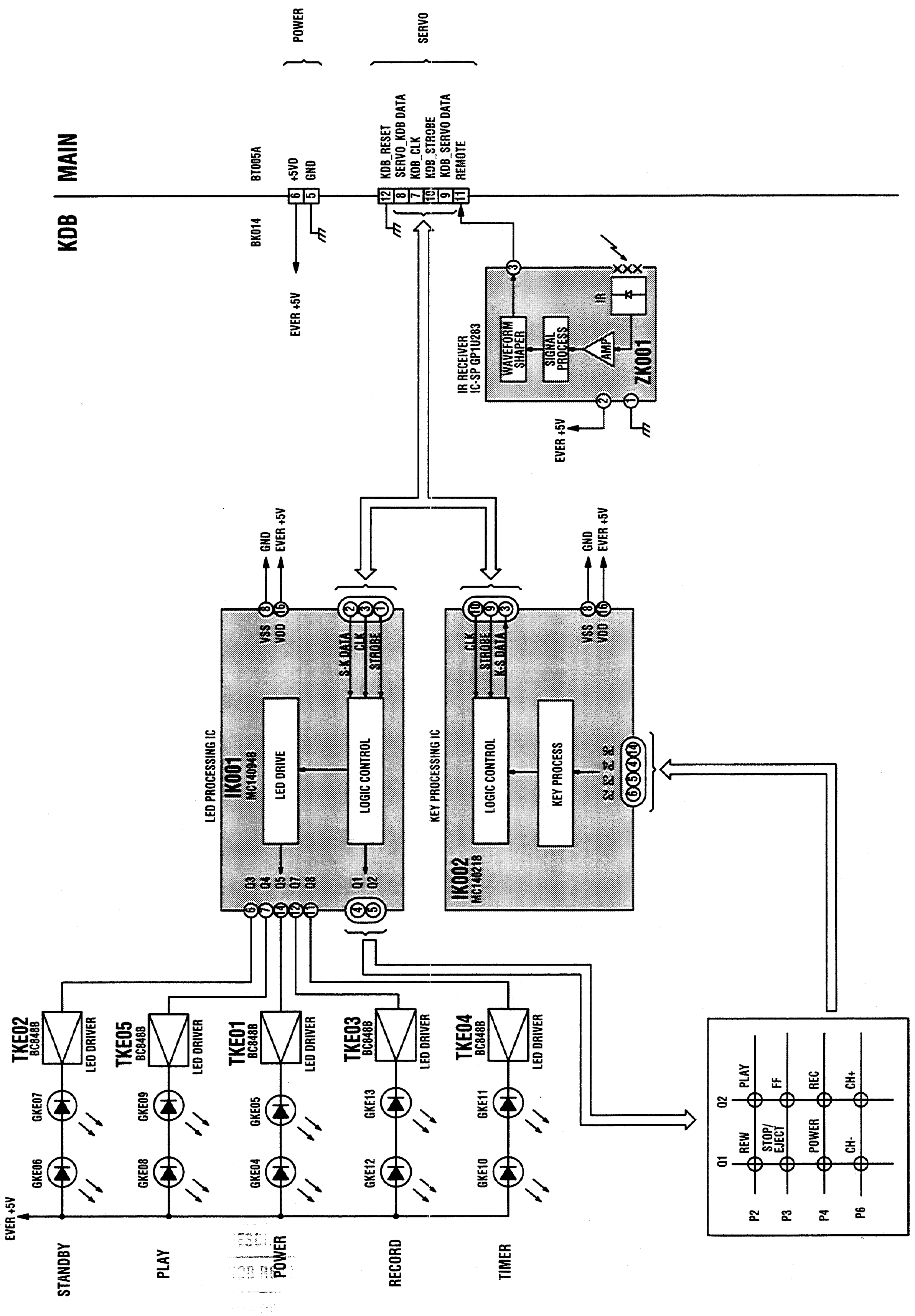
BOARD INTERCONNECTIONS - SCHEMA D'INTERCONNEXIONS - VERDRAHTUNGSPLAN - SCHEMA DEI COLLEGAMENTI - ESQUEMA DE INTERCONEXIONES


FFC CONN
CAM C 1 1 CAM C
CAM B 2 2 CAM B
CAM A 3 3 CAM A
GND 4 4 GND
LO_IN 5 5 LO_IN
LO_OUT 6 6 LO_OUT
FFC 6W L124mm
BT002 (60431002) SOLDERED
BT002A (10167420)
CAM LOADING MOTOR
1 VMC 1
2 MGND 2
3 AGND 3
4 FGA 4
5 FGB 5
6 CFG_BIAS 6
7 CDIR 7
8 LIMITER 8
9 C_REG 9
10 A_VCC1 10
CONN FE
(BOARD TO BOARD)
CONN MA BT001 (10137630)
CAPSTAN MOTOR
GND 1 1 GND
REC_YC 2 2 REC_YC
U2_+5VS 3 3 U2_+5VS
HD_CSYNC 4 4 HD_CSYNC
DFFHASEL 5 5 DFFHASEL
HD_VIDEO_ENV 6 6 HD_VIDEO_ENV
COMPARATOR 7 7 COMPARATOR
PB_YC 8 8 PB_YC
NC 9 9 NC
GND 10 10 GND
FFC 10W L
BV001 (10175950)
FFC CNN(1mm)
SOLDERED
HEAD AMP.
SECAM MODULE L
PB_Y/C 1
PB_ON 2
CHR_REC 3
P/ME_REC 4
HA_SEL 5
GND 6
V_EE_REC 7
+5VS 8
P/ME_CHR 9
PB_CHROMA 10
COL_OFF 11
CSYNC 12
KIL_DET 13
NC 14
NC 15
4.43MHz 16
BC100 CONN MA (10100910)
BOARD TO BOARD
1 FE HEAD 1
2 GND 2
BS030 (20212580)
FULL ERASE HEAD
FFC CONN
ERASECTL 1 1 ERASECTL
GND 2 2 GND
A_LIN_REC 3 3 A_LIN_REC
A_LIN_PB 4 4 A_LIN_PB
NC 5 5 NC
P_R_CTL1 6 6 P_R_CTL1
C_BIAS 7 7 C_BIAS
FFC 7W L140mm
BS034 (10120770)
BS034A (10120790)
SOLDERED
ACE HEAD
4 CTL_OUT
3 DRUM FF
2 GND
1 PB_YC
BW001 (11004830)
CAMERA_PAUSE 14
+14VE 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB_CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE_IR 1
BT005 (10161270)
BT005A (10161260)
SOLDERED
14W L150mm FFC
BK014
FFC CONN
UNLOCKING SYSTEM
KDB
20 43 25 90 (WD)

CONNECTING SYSTEM	PITCH mm
MMC	1.27
FFC	1.27/1.00
WIRE WITH CONN	2.00
WIRE TRAP	2.00
BOARD TO BOARD	2.5
CONN MALE(MA)	2.5

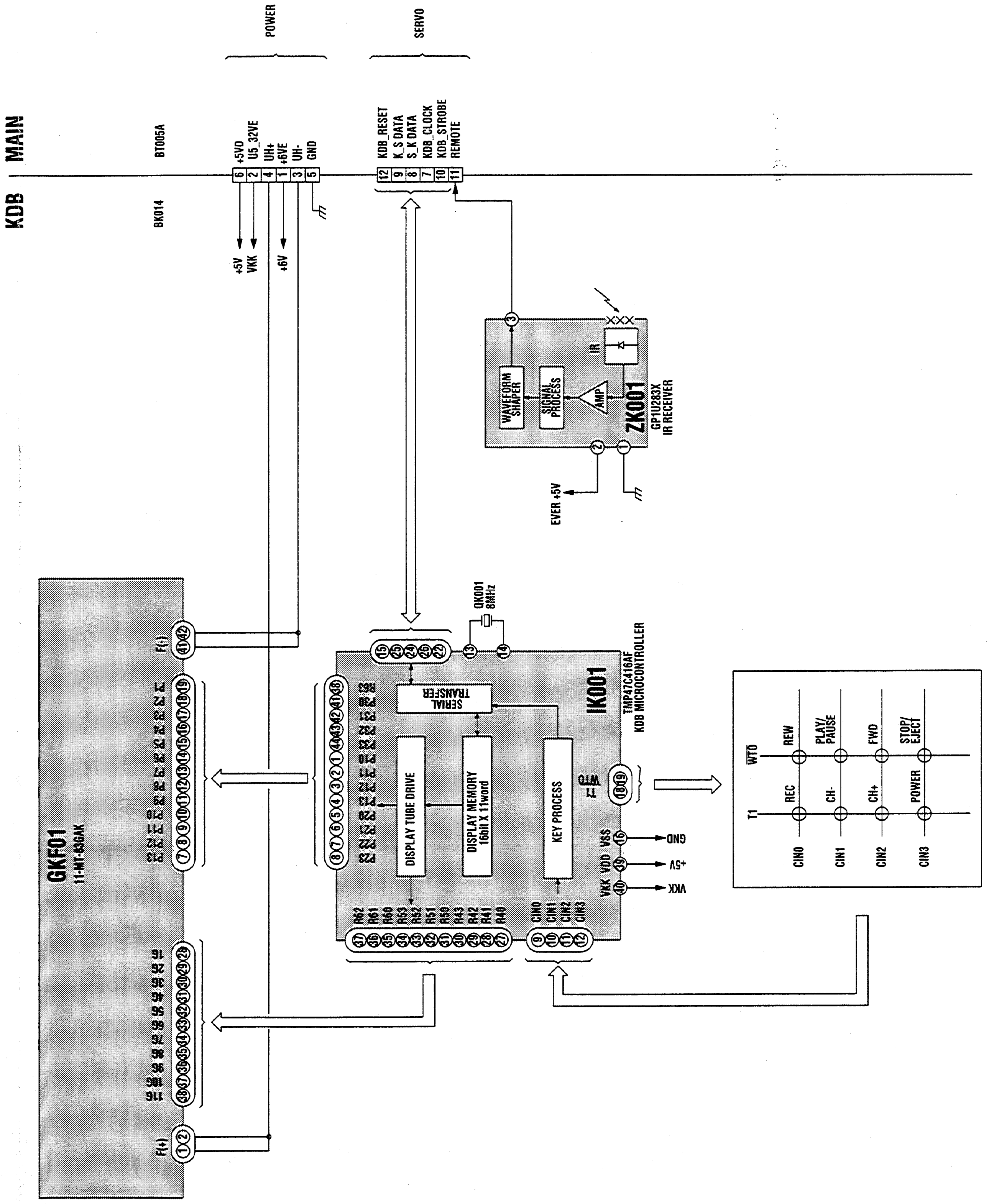
KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


MAIN
KDB
BT005A
BK014
POWER
SERVO
+5VD
GND
KDB_RESET
SERVO_KDB DATA
KDB_CLK
KDB_STROBE
KDB_SERVO DATA
REMOTE
EVER +5V
IR RECEIVER
IC-SP GP1U283
WAVEFORM SHAPER
SIGNAL PROCESS
AMP
IR
ZK001
LED PROCESSING IC
IK001
MC140948
LED DRIVE
LOGIC CONTROL
S-K DATA
CLK
STROBE
VSS
VDD
GND
KEY PROCESSING IC
IK002
MC140218
KEY PROCESS
K-S DATA
Q1
Q2
P2
P3
P4
P6
TKE02
TKE05
TKE01
TKE03
TKE04
BC848B
LED DRIVER
GKE07
GKE06
GKE09
GKE08
GKE05
GKE04
GKE13
GKE12
GKE11
GKE10
STANDBY
PLAY
POWER
RECORD
TIMER
REW
STOP/ EJECT
FF
POWER
REC
CH-
CH+

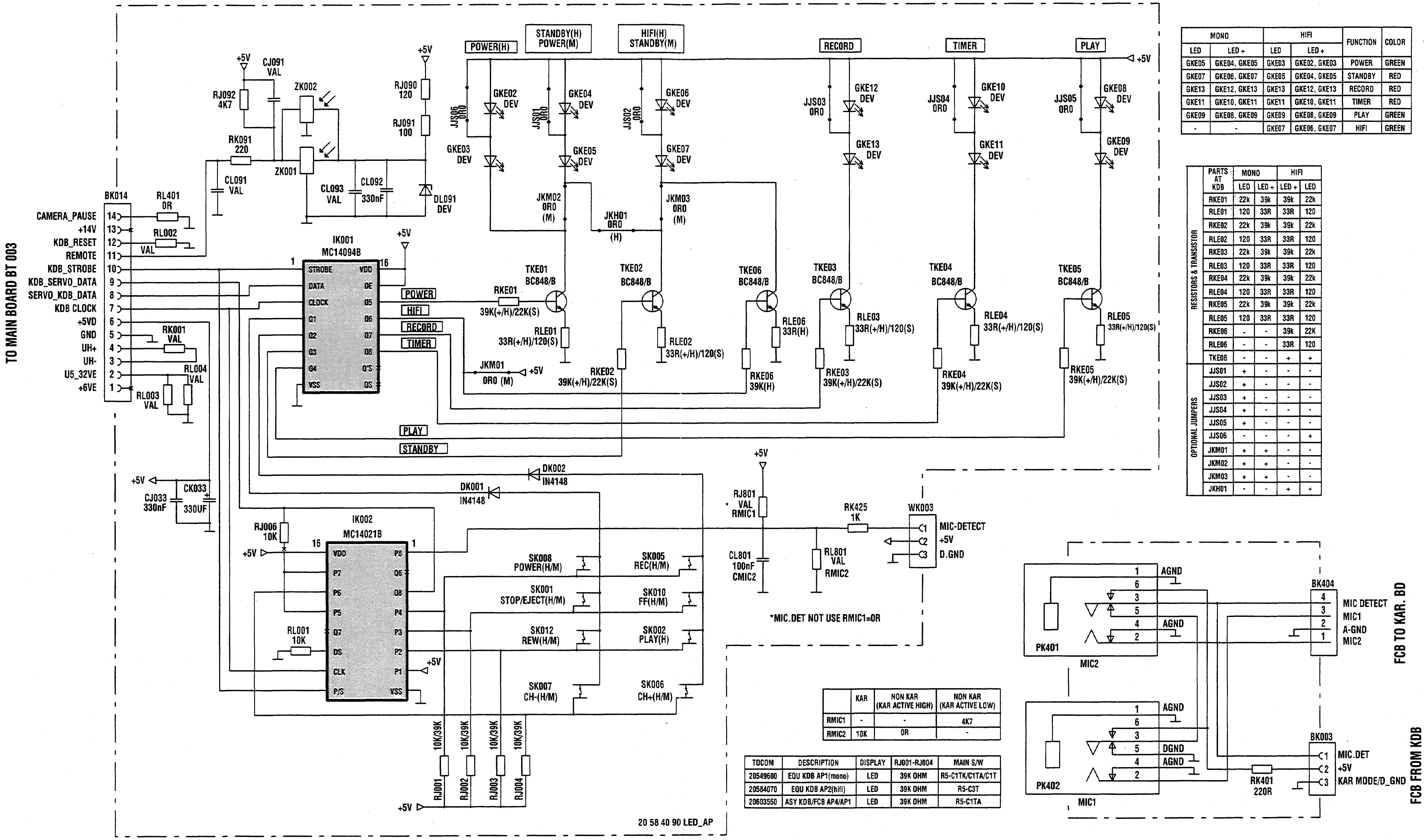
KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


MAIN
KDB
BT005A
BK014
POWER
SERVO
+5VD
U5_32VE
UH+
+6VE
UH-
GND
+5V
VKK
+6V
KDB_RESET
K_S DATA
S_K DATA
KDB_CLOCK
KDB_STROBE
REMOTE
ZK001
GP1U283X
IR RECEIVER
WAVEFORM SHAPER
SIGNAL PROCESS
AMP
IR
EVER +5V
QK001
8MHz
IK001
TMP47C416AF
KDB MICROCONTROLLER
SERIAL TRANSFER
DISPLAY TUBE DRIVE
DISPLAY MEMORY 16bit X 11word
KEY PROCESS
VKK
VDD
VSS
GND
+5V
CIN0
CIN1
CIN2
CIN3
GKF01
11-MT-483AK
F(-)
F(+)
T1
WTO
REW
PLAY/ PAUSE
FWD
STOP/ EJECT
REC
CH-
CH+
POWER

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

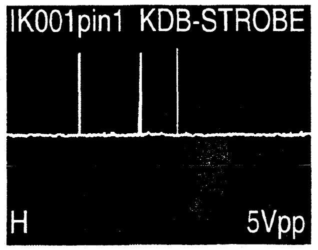

TO MAIN BOARD BT 003
CAMERA_PAUSE
+14V
KDB_RESET
REMOTE
KDB_STROBE
KDB_SERVO_DATA
SERVO_KDB_DATA
KDB CLOCK
+5VD
GND
UH+
UH-
U5_32VE
+6VE
BK014
RL401 0R
RL002 VAL
RK001 VAL
RL004 VAL
RL003 VAL
CJ091 VAL
RJ092 4K7
ZK002
RK091 220
ZK001
CL091 VAL
CL093 VAL
CL092 330nF
RJ090 120
RJ091 100
DL091 DEV
IK001
MC14094B
STROBE
DATA
CLOCK
Q1
Q2
Q3
Q4
VSS
VDD
OE
Q5
Q6
Q7
Q8
Q'S
QS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06 0R0
JJS01 0R0
JJS02 0R0
JJS03 0R0
JJS04 0R0
JJS05 0R0
GKE02 DEV
GKE03 DEV
GKE04 DEV
GKE05 DEV
GKE06 DEV
GKE07 DEV
GKE12 DEV
GKE13 DEV
GKE10 DEV
GKE11 DEV
GKE08 DEV
GKE09 DEV
JKM02 0R0 (M)
JKH01 0R0 (H)
JKM03 0R0 (M)
JKM01 0R0 (M)
TKE01 BC848/B
TKE02 BC848/B
TKE06 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
RKE01 39K(+/H)/22K(S)
RLE01 33R(+/H)/120(S)
RKE02 39K(+/H)/22K(S)
RLE02 33R(+/H)/120(S)
RKE06 39K(H)
RLE06 33R(H)
RKE03 39K(+/H)/22K(S)
RLE03 33R(+/H)/120(S)
RKE04 39K(+/H)/22K(S)
RLE04 33R(+/H)/120(S)
RKE05 39K(+/H)/22K(S)
RLE05 33R(+/H)/120(S)
+5V
DK002 IN4148
DK001 IN4148
CJ033 330nF
CK033 330UF
RJ006 10K
IK002
MC14021B
VDD
P7
P6
P5
Q7
DS
CLK
P/S
P8
Q6
Q8
P4
P3
P2
P1
VSS
RL001 10K
SK008 POWER(H/M)
SK001 STOP/EJECT(H/M)
SK012 REW(H/M)
SK007 CH-(H/M)
SK005 REC(H/M)
SK010 FF(H/M)
SK002 PLAY(H)
SK006 CH+(H/M)
RJ001 10K/39K
RJ002 10K/39K
RJ003 10K/39K
RJ004 10K/39K
20 58 40 90 LED_AP
RJ801 VAL RMIC1
CL801 100nF CMIC2
RK425 1K
RL801 VAL RMIC2
WK003
MIC-DETECT
+5V
D.GND
*MIC.DET NOT USE RMIC1=0R
AGND
PK401
MIC2
BK404
MIC DETECT
MIC1
A-GND
MIC2
FCB TO KAR. BD
DGND
PK402
MIC1
BK003
MIC.DET
+5V
KAR MODE/D_GND
RK401 220R
FCB FROM KDB

MONO		HIFI		FUNCTION	COLOR
LED	LED +	LED	LED +		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	GKE09	GKE08, GKE09	PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

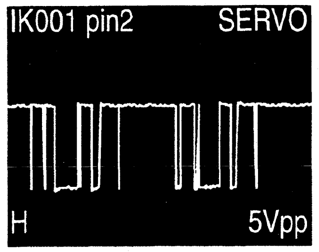
	PARTS AT KDB	MONO		HIFI	
		LED	LED +	LED +	LED
RESISTORS & TRANSISTOR	RKE01	22k	39k	39k	22k
	RLE01	120	33R	33R	120
	RKE02	22k	39k	39k	22k
	RLE02	120	33R	33R	120
	RKE03	22k	39k	39k	22k
	RLE03	120	33R	33R	120
	RKE04	22k	39k	39k	22k
	RLE04	120	33R	33R	120
	RKE05	22k	39k	39k	22k
	RLE05	120	33R	33R	120
	RKE06	-	-	39k	22K
	RLE06	-	-	33R	120
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	-	-
	JJS02	+	-	-	-
	JJS03	+	-	-	-
	JJS04	+	-	-	-
	JJS05	+	-	-	-
	JJS06	-	-	-	+
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

	KAR	NON KAR (KAR ACTIVE HIGH)	NON KAR (KAR ACTIVE LOW)
RMIC1	-	-	4K7
RMIC2	10K	0R	-

TOCOM	DESCRIPTION	DISPLAY	RJ001-RJ004	MAIN S/W
20549600	EQU KDB AP1(mono)	LED	39K OHM	R5-C1TK/C1TA/C1T
20584070	EQU KDB AP2(hifi)	LED	39K OHM	R5-C3T
20603550	ASY KDB/FCB AP4/AP1	LED	39K OHM	R5-C1TA



①



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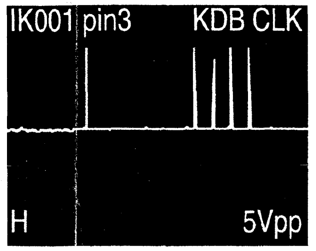

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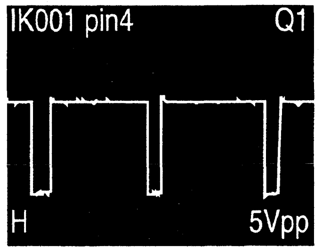

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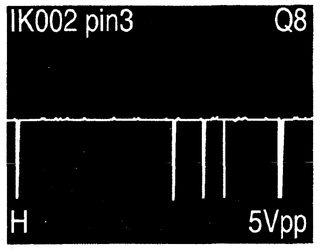
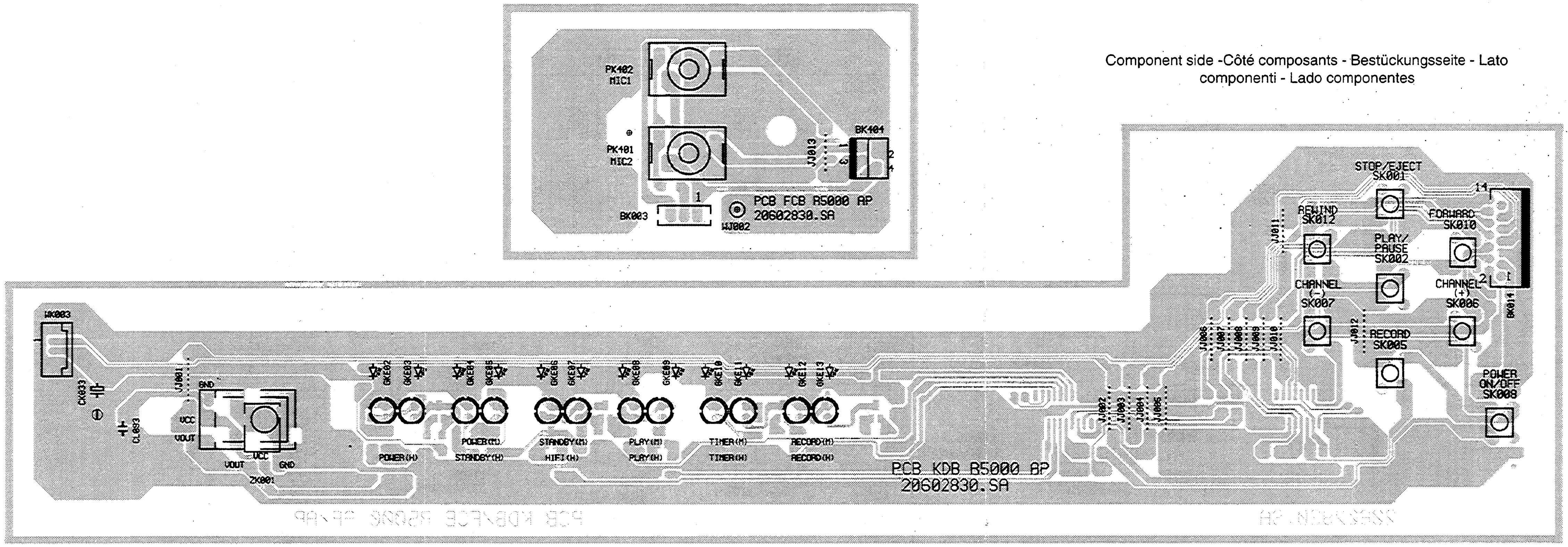


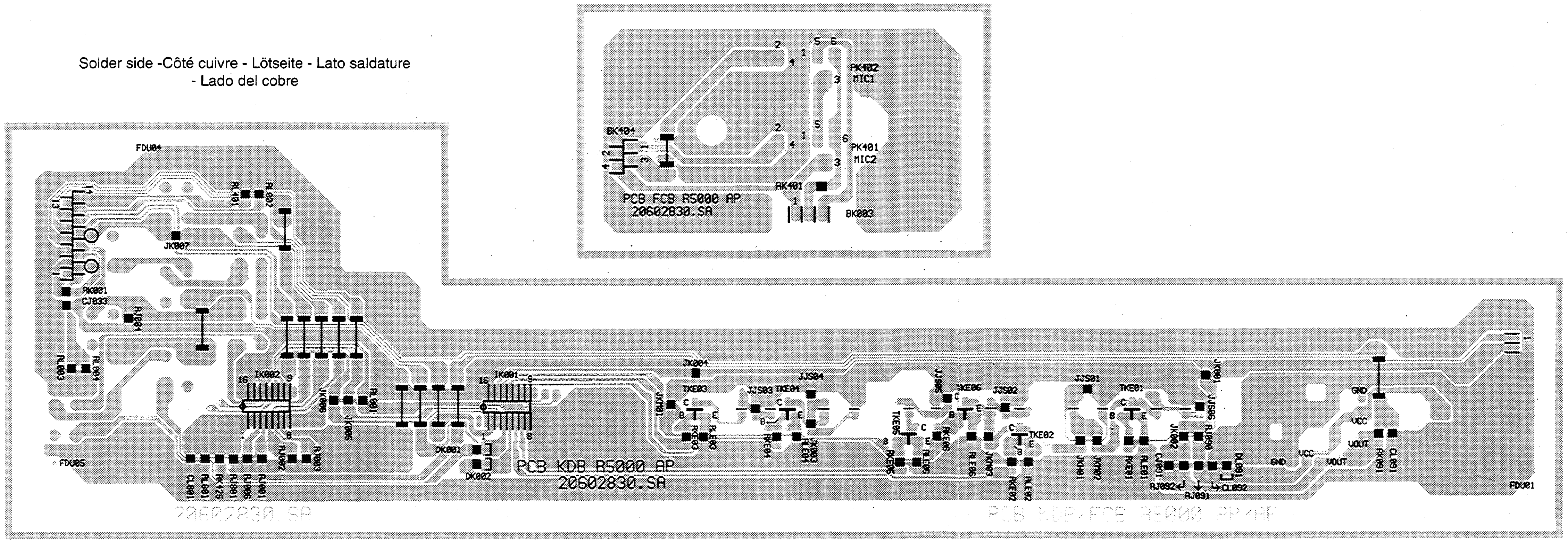
⑤

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR


PK402
MIC1
PK401
MIC2
BK404
JJ013
BK003
PCB FCB R5000 AP
20602830.SA
WJ002
STOP/EJECT
SK001
REWIND
SK012
FORWARD
SK010
PLAY/
PAUSE
SK002
CHANNEL
(–)
SK007
CHANNEL
(+)
SK006
RECORD
SK005
POWER
ON/OFF
SK008
BK014
JJ011
JJ012
WK003
CK033
CL093
GND
VCC
VOUT
ZK001
POWER(H)
POWER(M)
STANDBY(H)
STANDBY(M)
HIFI(H)
PLAY(M)
PLAY(H)
TIMER(M)
TIMER(H)
RECORD(M)
RECORD(H)
PCB KDB R5000 AP
20602830.SA

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

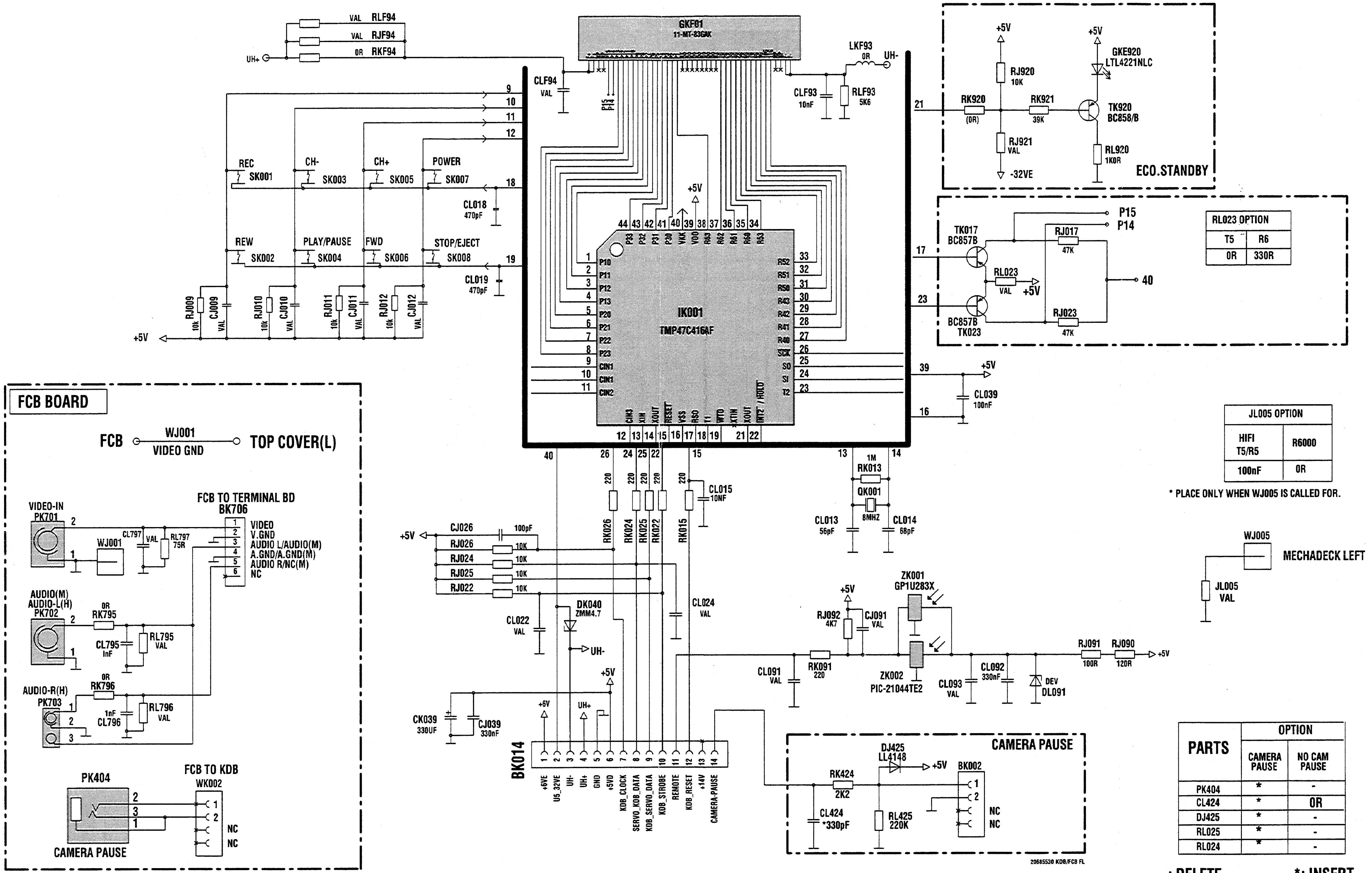
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


BK404
PK402
MIC1
PK401
MIC2
RK401
BK003
PCB FCB R5000 AP
20602830.SA
FDU04
FDU05
FDU01
RK001
CJ033
JK007
IK002
IK001
DK001
DK002
JK004
TKE03
TKE04
TKE05
TKE06
TKE02
TKE01
JJS03
JJS04
JJS02
JJS01
GND
VCC
VOUT
CL092
RJ092
RJ091
PCB KDB R5000 AP
20602830.SA

KDB		MODE		
LOC	PIN	EE	PLAY	REC.
IK001	1	0	0	0
	2	4	4.1	4.1
	3	0	0	0
	4	4.5	4.4	4.4
	5	4.5	4.5	4.5
	6	0	0	0
	7	0	5.1	0
	8	0	0	0
	9	0.2	0.3	0.3
	10	0.2	0.3	0.3
	11	0	0	0
	12	0	0	0
	13	5.2	5.2	5.2
	14	5.2	5.1	5.1
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
IK002	1	5.2	5.2	5.2
	2	NC	NC	NC
	3	5.1	5.1	5.1
	4	5.2	5.2	5.2
	5	5.2	5.2	5.2
	6	0	5.2	5.2
	7	5.2	5.2	5.2
	8	0	0	0
	9	0	0	0
	10	0	0	0
	11	0	0	0
	12	NC	NC	NC
	13	5.2	5.2	5.2
	14	5.2	5.2	5.2
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
TKE01	E	2.5	2.5	2.5
	B	3.3	3.2	3.2
	C	2.9	2.9	2.9
TKE02	E	0	0	0
	B	0	0	0
	C	4.1	4.1	4.1
TKE03	E	0	0	3.6
	B	0	0	3.3
	C	4.2	4.1	3.2
TKE04	E	0	0	0
	B	0	0	0
	C	4.1	4.1	4.1
TKE05	E	0	2.5	0
	B	0	3.2	0
	C	3.9	3.9	3.9
ZK001	1	0	0	0
	2	4.7	4.7	4.7
	3	5.1	5.1	5.1

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


GKF01
11-MT-83GAK
RLF94
RJF94
RKF94
VAL
0R
UH+
UH-
LKF93
CLF94
CLF93
10nF
RLF93
5K6
P15
P14
REC
SK001
CH-
SK003
CH+
SK005
POWER
SK007
CL018
470pF
REW
SK002
PLAY/PAUSE
SK004
FWD
SK006
STOP/EJECT
SK008
CL019
470pF
RJ009
CJ009
RJ010
CJ010
RJ011
CJ011
RJ012
CJ012
10k
+5V
IK001
TMP47C416AF
P10
P11
P12
P13
P20
P21
P22
P23
CIN1
CIN2
R52
R51
R50
R43
R42
R41
R40
SCK
SO
SI
T2
CIN3
XIN
XOUT
RESET
VSS
R50
T1
WTO
XTIN
XOUT
INT2 / HOLD
P33
P32
P31
P30
VKK
VDD
R63
R62
R61
R60
R53
RJ920
10K
RK920
(0R)
RK921
39K
RJ921
VAL
-32VE
GKE920
LTL4221NLC
TK920
BC858/B
RL920
1K0R
ECO.STANDBY
TK017
BC857B
RJ017
47K
RL023
VAL
RJ023
47K
BC857B
TK023
CL039
100nF
FCB BOARD
FCB
WJ001
VIDEO GND
TOP COVER(L)
VIDEO-IN
PK701
CL797
RL797
75R
FCB TO TERMINAL BD
BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
AUDIO(M)
AUDIO-L(H)
PK702
RK795
CL795
InF
RL795
AUDIO-R(H)
PK703
RK796
CL796
RL796
PK404
FCB TO KDB
WK002
CAMERA PAUSE
CJ026
100pF
RJ026
RJ024
RJ025
RJ022
10K
RK026
RK024
RK025
RK022
RK015
220
CL015
10NF
DK040
ZMM4.7
CL022
CL024
CK039
330UF
CJ039
330nF
+6V
BK014
+6VE
U5_32VE
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RK013
1M
QK001
8MHZ
CL013
56pF
CL014
68pF
ZK001
GP1U283X
RJ092
4K7
CJ091
CL091
RK091
220
ZK002
PIC-21044TE2
CL093
CL092
330nF
DEV
DL091
RJ091
100R
RJ090
120R
DJ425
LL4148
BK002
RK424
2K2
CL424
*330pF
RL425
220K
WJ005
MECHADECK LEFT
JL005
20685530 KDB/FCB FL

RL023 OPTION	
T5	R6
0R	330R

JL005 OPTION	
HIFI T5/R5	R6000
100nF	0R

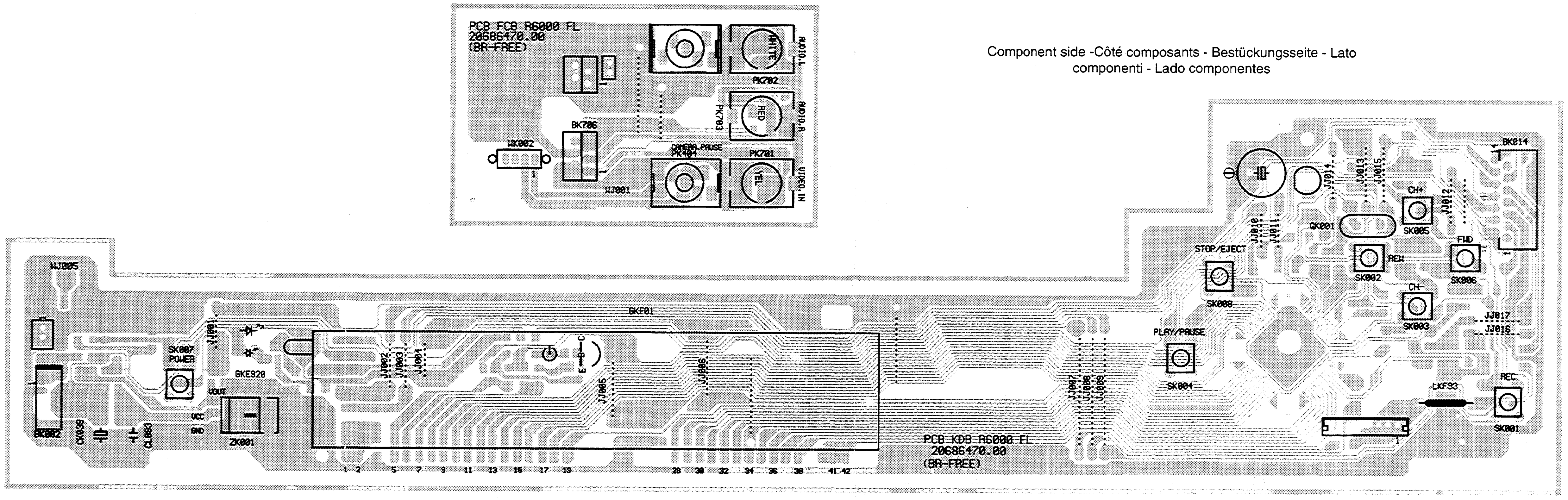
* PLACE ONLY WHEN WJ005 IS CALLED FOR.

PARTS	OPTION	
	CAMERA PAUSE	NO CAM PAUSE
PK404	*	-
CL424	*	0R
DJ425	*	-
RL025	*	-
RL024	*	-

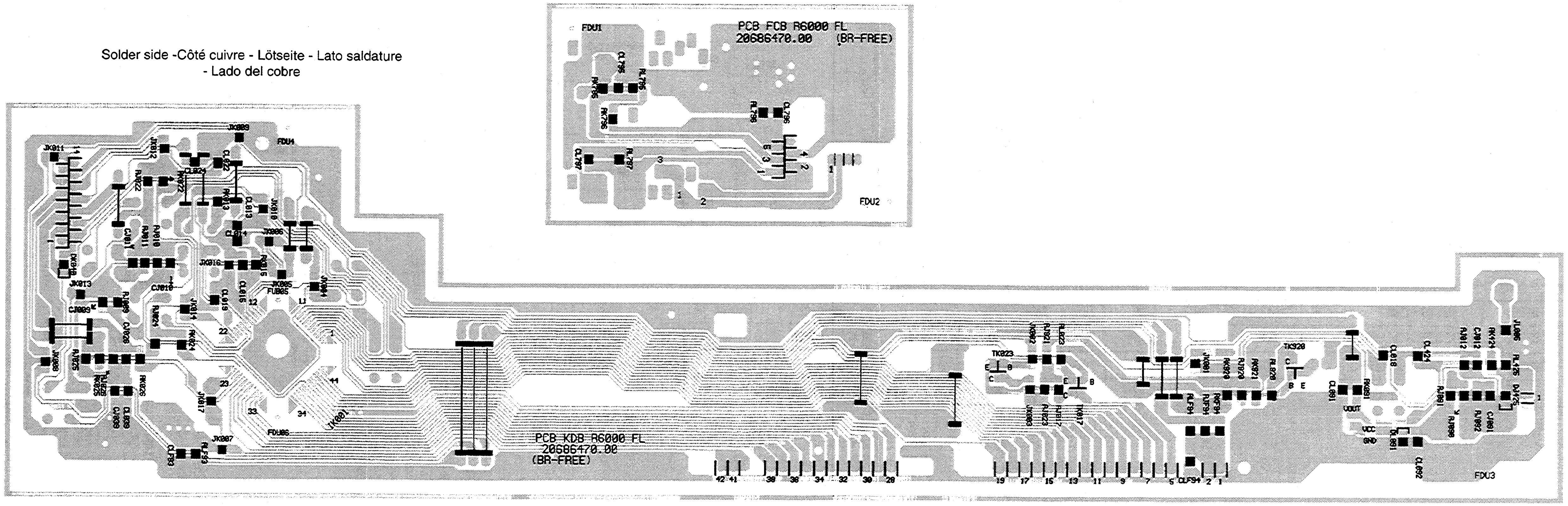
-: DELETE *: INSERT

TOCOM	DESCRIPTION	CAM.PAUSE	FAV	S/W	ECO	SK001-SK008	MODELS
20685500	ASY KDB/FCB R6 FL1/FL1	YES	2	R6-R1T	YES	HIFI/MONO	VP2750,VP4750
20729530	ASY KDB/FCB R6 FL2/FL2	YES	3	R6-R1T	NO	HIFI/MONO	VPH6750
20723090	EQU KDB R6 FL3	NO	NO	R6-R1T	YES	HIFI/MONO	VP2701,VP4701,V2700,V4700

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

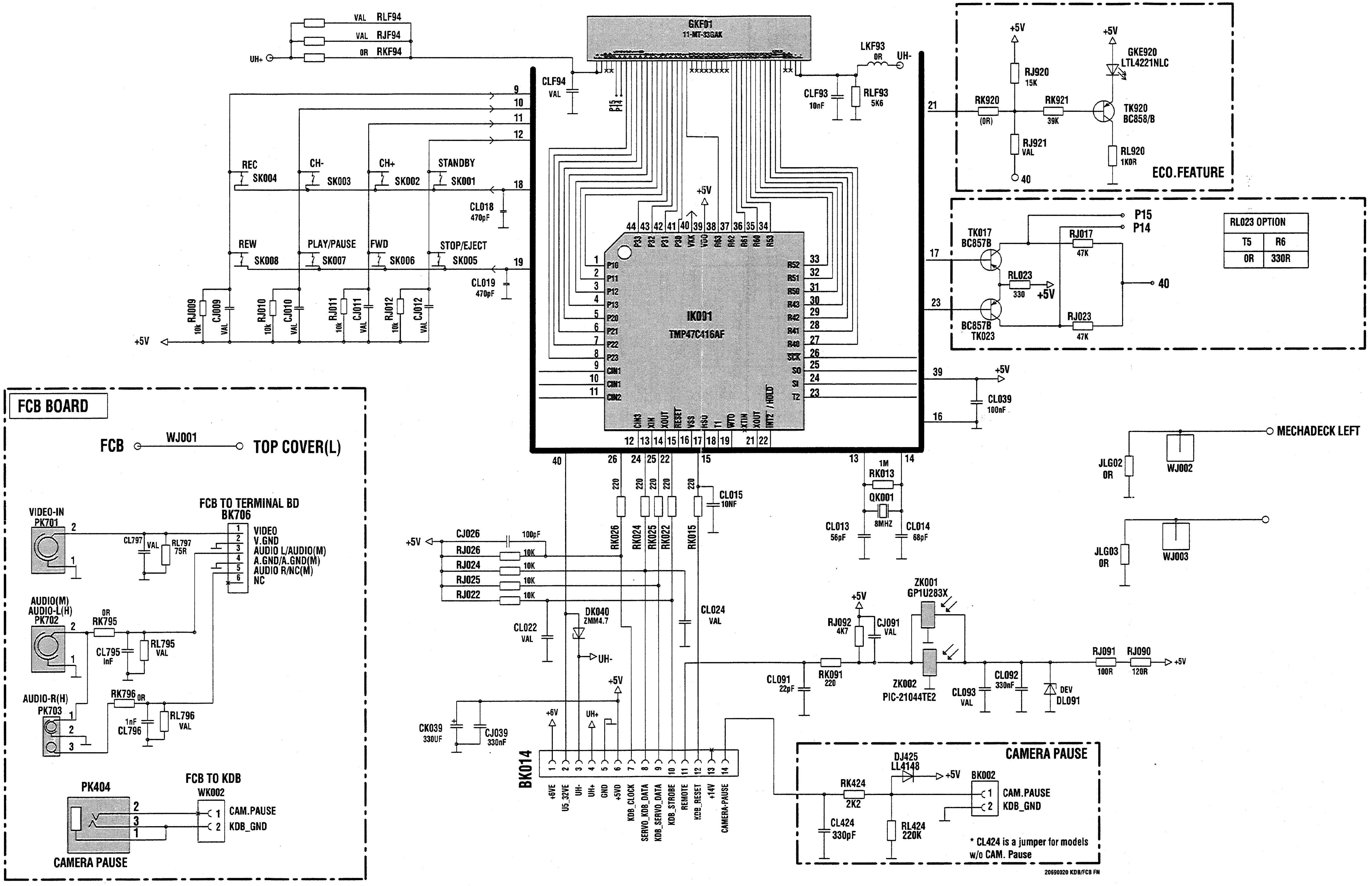
PCB FCB R6000 FL
20686470.00
(BR-FREE)
AUDIO.L
WHITE
PK702
PK703
RED
AUDIO.R
BK706
WK002
CAMERA.PAUSE
PK704
PK701
YEL
VIDEO.IN
WJ001
BK014
CH+
SK005
QK001
STOP/EJECT
REW
FWD
SK002
SK006
SK008
CH-
SK003
JJ017
JJ016
PLAY/PAUSE
SK004
LKF93
REC
SK001
GKF01
WJ005
SK007
POWER
BKE920
VOUT
VCC
GND
ZK001
BK002
CX039
CL083
PCB KDB R6000 FL
20686470.00
(BR-FREE)


Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

FDU1
PCB FCB R6000 FL
20686470.00 (BR-FREE)
FDU2
JK009
FDU4
JK011
JK013
FDU6
JK007
TK023
TK920
FDU3
VOUT
VCC
GND
PCB KDB R6000 FL
20686470.00
(BR-FREE)

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

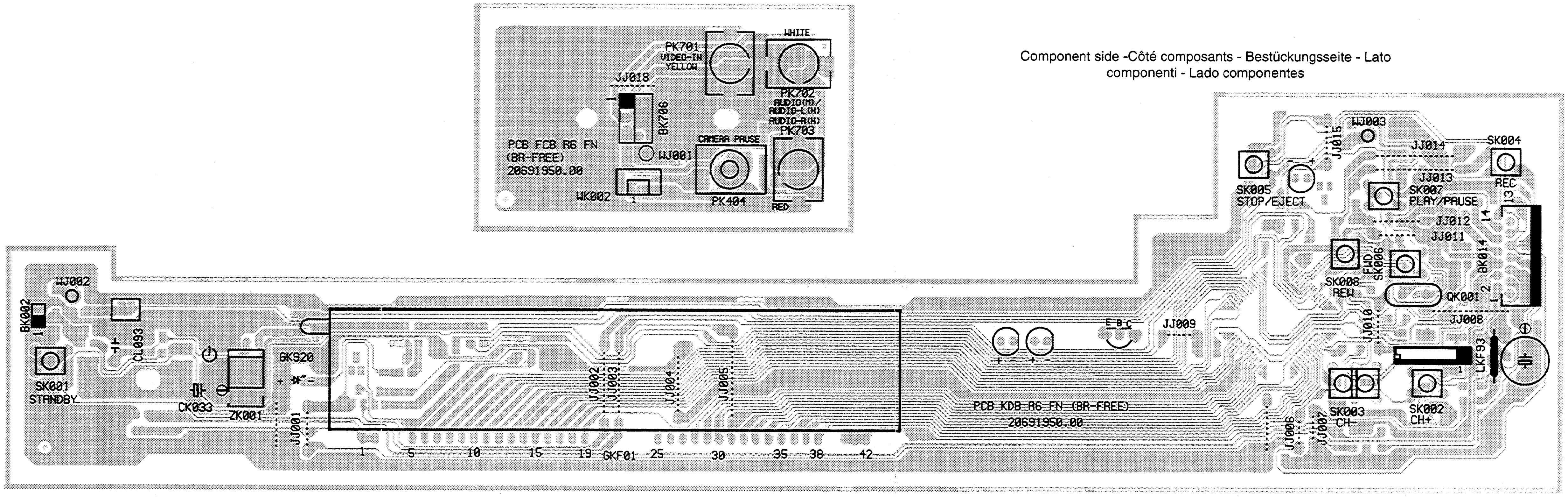
SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


GKF01
11-MT-33GAK
VAL RLF94
VAL RJF94
OR RKF94
UH+
CLF94
VAL
LKF93
0R
UH-
CLF93
10nF
RLF93
5K6
P15
P14
REC
SK004
CH-
SK003
CH+
SK002
STANDBY
SK001
CL018
470pF
REW
SK008
PLAY/PAUSE
SK007
FWD
SK006
STOP/EJECT
SK005
CL019
470pF
RJ009
10k
CJ009
VAL
RJ010
10k
CJ010
VAL
RJ011
10k
CJ011
VAL
RJ012
10k
CJ012
VAL
+5V
IK001
TMP47C416AF
CL039
100nF
+5V
GKE920
LTL4221NLC
RJ920
15K
RK920
(0R)
RK921
39K
TK920
BC858/B
RJ921
VAL
RL920
1K0R
40
ECO.FEATURE
TK017
BC857B
RJ017
47K
RL023
330
BC857B
TK023
RJ023
47K
RL023 OPTION
T5
R6
0R
330R
MECHADECK LEFT
JLG02
0R
WJ002
JLG03
0R
WJ003
FCB BOARD
FCB
WJ001
TOP COVER(L)
FCB TO TERMINAL BD
BK706
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
VIDEO-IN
PK701
CL797
VAL
RL797
75R
AUDIO(M)
AUDIO-L(H)
PK702
0R
RK795
CL795
1nF
RL795
VAL
AUDIO-R(H)
PK703
RK796
0R
1nF
CL796
RL796
VAL
FCB TO KDB
WK002
CAM.PAUSE
KDB_GND
PK404
CAMERA PAUSE
CJ026
100pF
RJ026
10K
RJ024
10K
RJ025
10K
RJ022
10K
RK026
RK024
RK025
RK022
RK015
220
CL015
10NF
CL022
VAL
DK040
ZMM4.7
UH-
CL024
VAL
CK039
330UF
CJ039
330nF
+6V
UH+
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
1M
RK013
QK001
8MHZ
CL013
56pF
CL014
68pF
ZK001
GP1U283X
RJ092
4K7
CJ091
VAL
CL091
22pF
RK091
220
ZK002
PIC-21044TE2
CL093
VAL
CL092
330nF
DEV
DL091
RJ091
100R
RJ090
120R
CAMERA PAUSE
DJ425
LL4148
RK424
2K2
BK002
CAM.PAUSE
KDB_GND
CL424
330pF
RL424
220K
* CL424 is a jumper for models w/o CAM. Pause
20690020 KDB/FCB FN

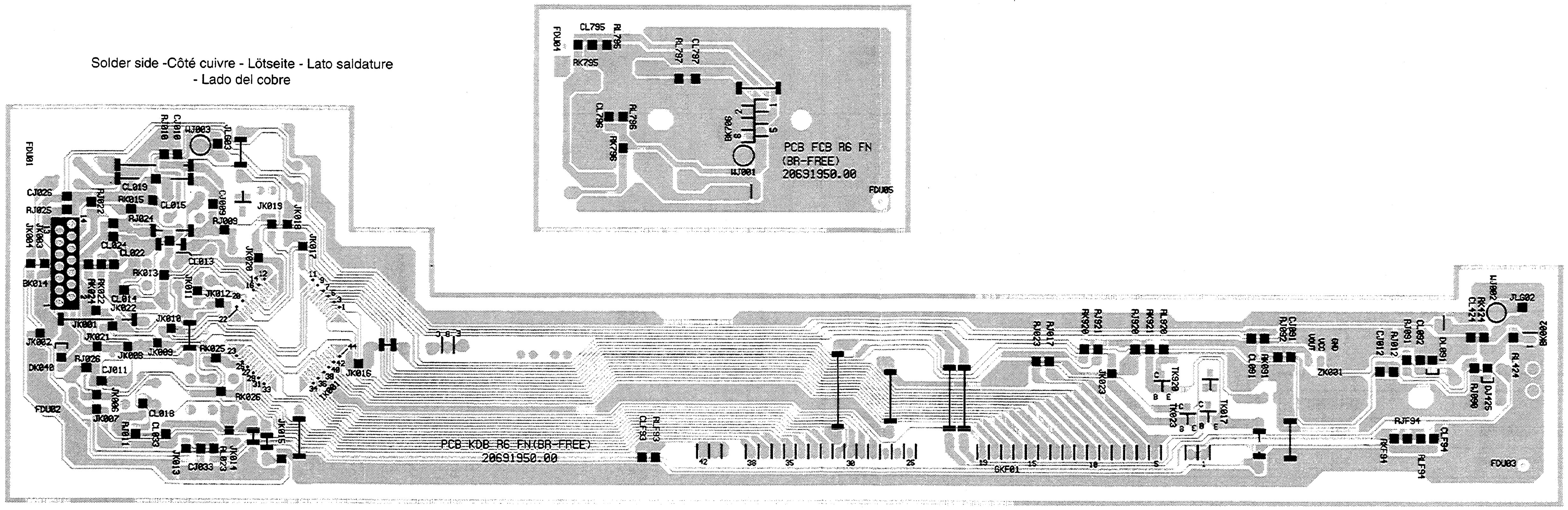
TOCOM	DESCRIPTION	CAM.PAUSE	FAV	MODEL	ECO	RL023	WJ002	JLG02	TOOL
20699840	EQU KDB R6 FN1	NO	NO	T5000	NO	0R	NO	NO	97-3B
20734180	EQU KDB R6 FN2	NO	NO	R6000	YES	330R	YES	YES	97-3B

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

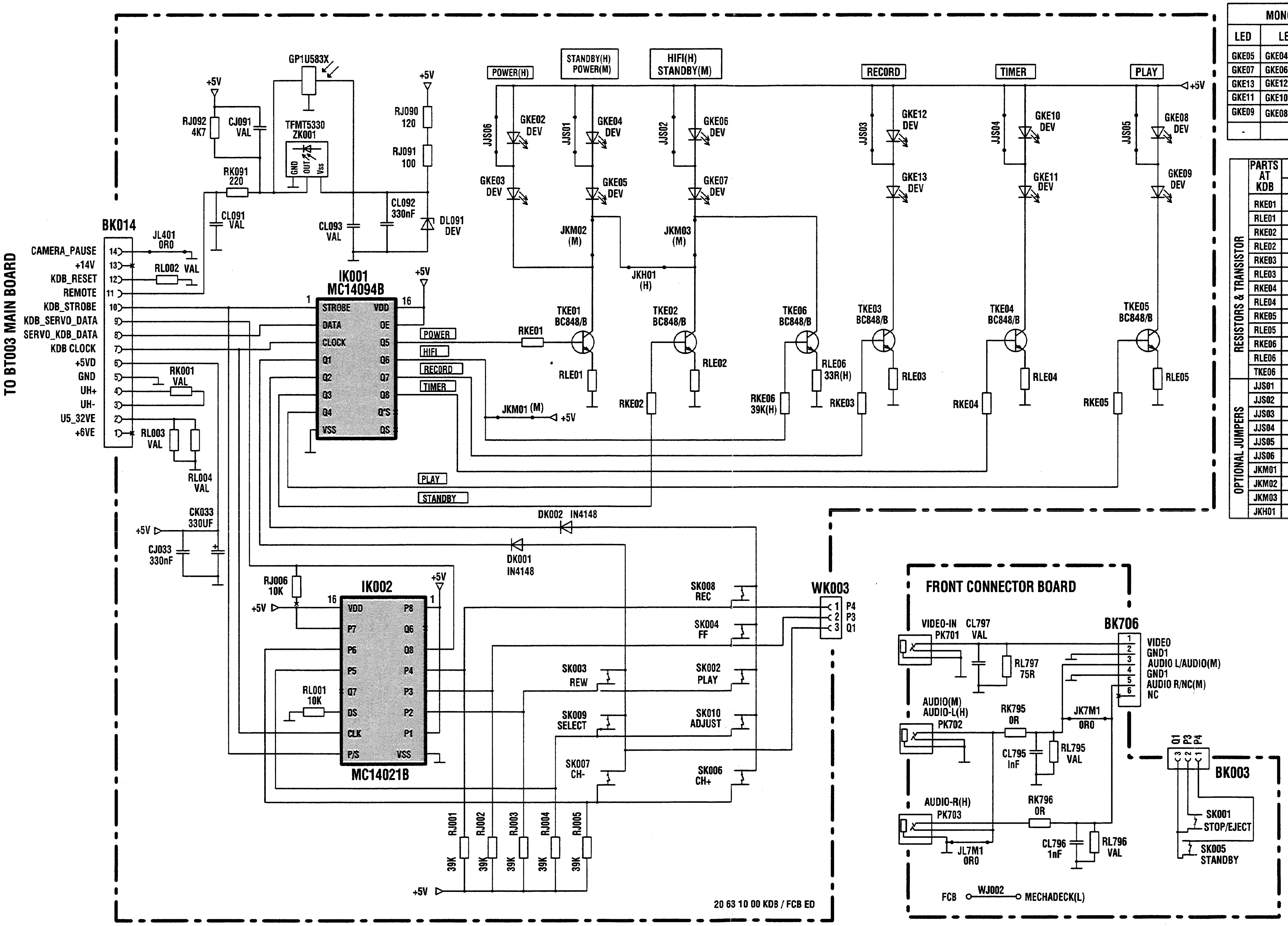

PK701
VIDEO-IN
YELLOW
WHITE
JJ018
BK706
PK702
AUDIO(M)/
AUDIO-L(H)
AUDIO-R(H)
PK703
PCB FCB R6 FN
(BR-FREE)
20691950.00
WJ001
CAMERA PAUSE
WK002
PK404
RED
WJ003
JJ015
JJ014
SK004
SK005
STOP/EJECT
JJ013
SK007
PLAY/PAUSE
REC
JJ012
JJ011
SK008
REW
FWD
SK006
BK014
QK001
WJ002
BK002
SK001
STANDBY
CL093
CK033
ZK001
GK920
JJ001
JJ002
JJ003
JJ004
JJ005
JJ009
JJ010
JJ008
LKF93
PCB KDB R6 FN (BR-FREE)
20691950.00
JJ006
JJ007
SK003
CH-
SK002
CH+
GKF01

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU04
CL795
RL795
RK795
RL797
CL797
CL796
RL796
RK796
BK706
WJ001
PCB FCB R6 FN
(BR-FREE)
20691950.00
FDU05
FDU01
WJ003
JLG03
CJ025
RJ025
JK004
BK014
JK002
DK040
FDU02
CL019
CL015
RJ024
RJ009
JK019
CL024
CL022
CL013
RK013
JK012
JK010
JK021
JK008
JK009
RK025
RJ026
CJ011
RK026
JK016
CL018
JK007
CL033
CJ033
JK013
JK014
PCB KDB R6 FN (BR-FREE)
20691950.00
RLF93
CLF93
GKF01
TK020
TK023
TK017
ZK001
RKF94
RLF94
RJF94
CLF94
JLG02
RL124
FDU03

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TO BT003 MAIN BOARD
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
JL401 0R0
RL002 VAL
RK001 VAL
RL003 VAL
RL004 VAL
CK033 330UF
CJ033 330nF
+5V
GP1U583X
TFMT5330
ZK001
GND OUT Vss
RJ092 4K7
CJ091 VAL
RK091 220
CL091 VAL
CL093 VAL
RJ090 120
RJ091 100
CL092 330nF
DL091 DEV
IK001
MC14094B
STROBE
DATA
CLOCK
Q1
Q2
Q3
Q4
VSS
VDD
OE
Q5
Q6
Q7
Q8
Q'S
QS
1
16
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
JKM01 (M)
POWER(H)
STANDBY(H) POWER(M)
HIFI(H) STANDBY(M)
RECORD
TIMER
PLAY
JJS06
JJS01
JJS02
JJS03
JJS04
JJS05
GKE02 DEV
GKE04 DEV
GKE06 DEV
GKE12 DEV
GKE10 DEV
GKE08 DEV
GKE03 DEV
GKE05 DEV
GKE07 DEV
GKE13 DEV
GKE11 DEV
GKE09 DEV
JKM02 (M)
JKM03 (M)
JKH01 (H)
TKE01 BC848/B
TKE02 BC848/B
TKE06 BC848/B
TKE03 BC848/B
TKE04 BC848/B
TKE05 BC848/B
RKE01
RLE01
RLE02
RKE02
RLE06 33R(H)
RKE06 39K(H)
RKE03
RLE03
RKE04
RLE04
RKE05
RLE05
DK002 IN4148
DK001 IN4148
RJ006 10K
IK002
MC14021B
VDD
P7
P6
P5
Q7
DS
CLK
P/S
P8
Q6
Q8
P4
P3
P2
P1
VSS
RL001 10K
SK008 REC
SK004 FF
SK003 REW
SK002 PLAY
SK009 SELECT
SK010 ADJUST
SK007 CH-
SK006 CH+
RJ001 39K
RJ002 39K
RJ003 39K
RJ004 39K
RJ005 39K
WK003
1 P4
2 P3
3 Q1
20 63 10 00 KDB / FCB ED
FRONT CONNECTOR BOARD
VIDEO-IN
PK701
CL797 VAL
RL797 75R
BK706
1 VIDEO
2 GND1
3 AUDIO L/AUDIO(M)
4 GND1
5 AUDIO R/NC(M)
6 NC
AUDIO(M) AUDIO-L(H)
PK702
RK795 0R
JK7M1 0R0
CL795 InF
RL795 VAL
AUDIO-R(H)
PK703
RK796 0R
JL7M1 0R0
CL796 1nF
RL796 VAL
Q1 P3 P4
BK003
SK001 STOP/EJECT
SK005 STANDBY
FCB
WJ002
MECHADECK(L)

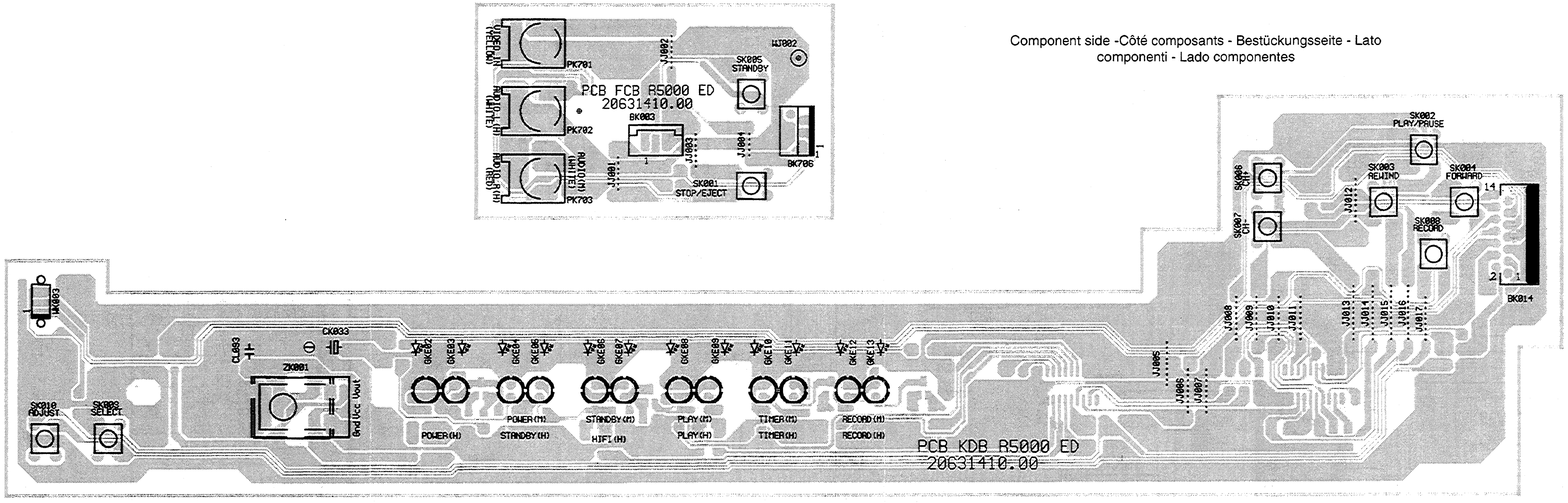
MONO		HIFI		FUNCTION	COLOR
LED	LED+	LED	LED+		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13		RECORD	RED
GKE11	GKE10, GKE11	GKE11		TIMER	RED
GKE09	GKE08, GKE0	GKE09		PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

	PARTS AT KDB	MONO		HIFI	
		LED	LED+	LED	LED+
RESISTORS & TRANSISTOR	RKE01	22K	39K	22K	39K
	RLE01	120	33R	120	33R
	RKE02	22K	39K	22K	39K
	RLE02	120	33R	120	33R
	RKE03	22K	39K	22K	39K
	RLE03	120	33R	120	33R
	RKE04	22K	39K	22K	39K
	RLE04	120	33R	120	33R
	RKE05	22K	39K	22K	39K
	RLE05	120	33R	120	33R
	RKE06	-	-	22K	39K
	RLE06	-	-	120	33R
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	+	-
	JJS02	+	-	+	-
	JJS03	+	-	+	-
	JJS04	+	-	+	-
	JJS05	+	-	+	-
	JJS06	+	-	+	-
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

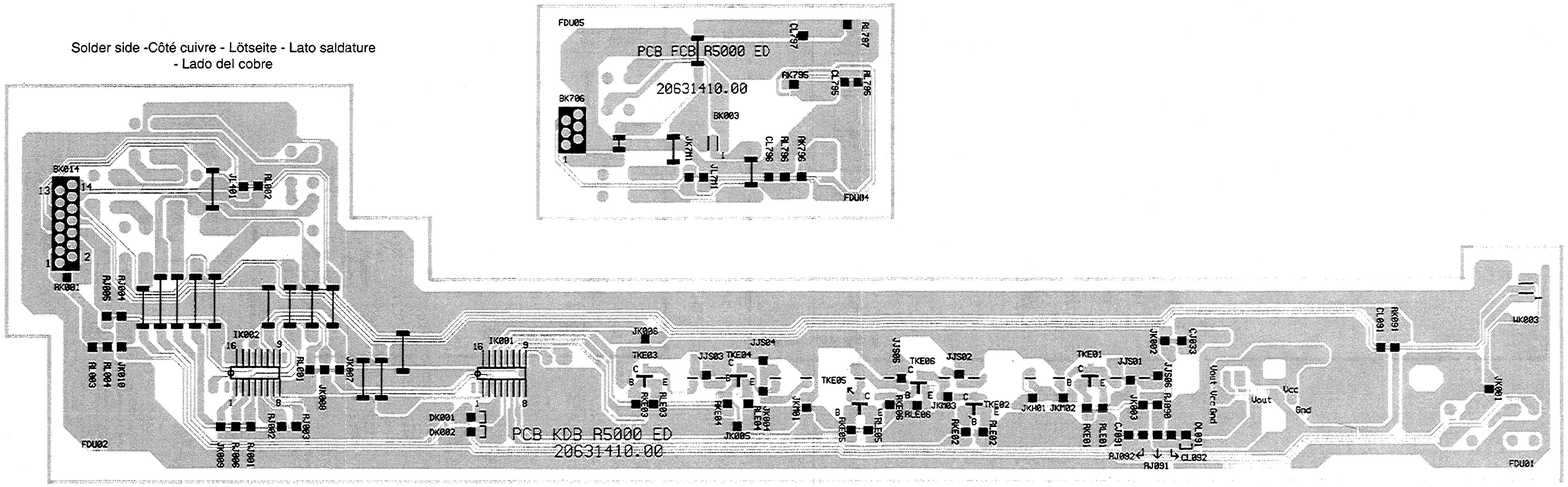
PARTS	FRONT AV	
	MONO	HIFI
PK701	*	*
PK702	-	*
PK703	*	*
JK7M1	*	-
JL7M1	*	-
CL797	*	*
RL797	*	*
CL795	-	*
RL795	-	*
RK795	-	*
CL796	*	*
RL796	*	*
RK796	*	*

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

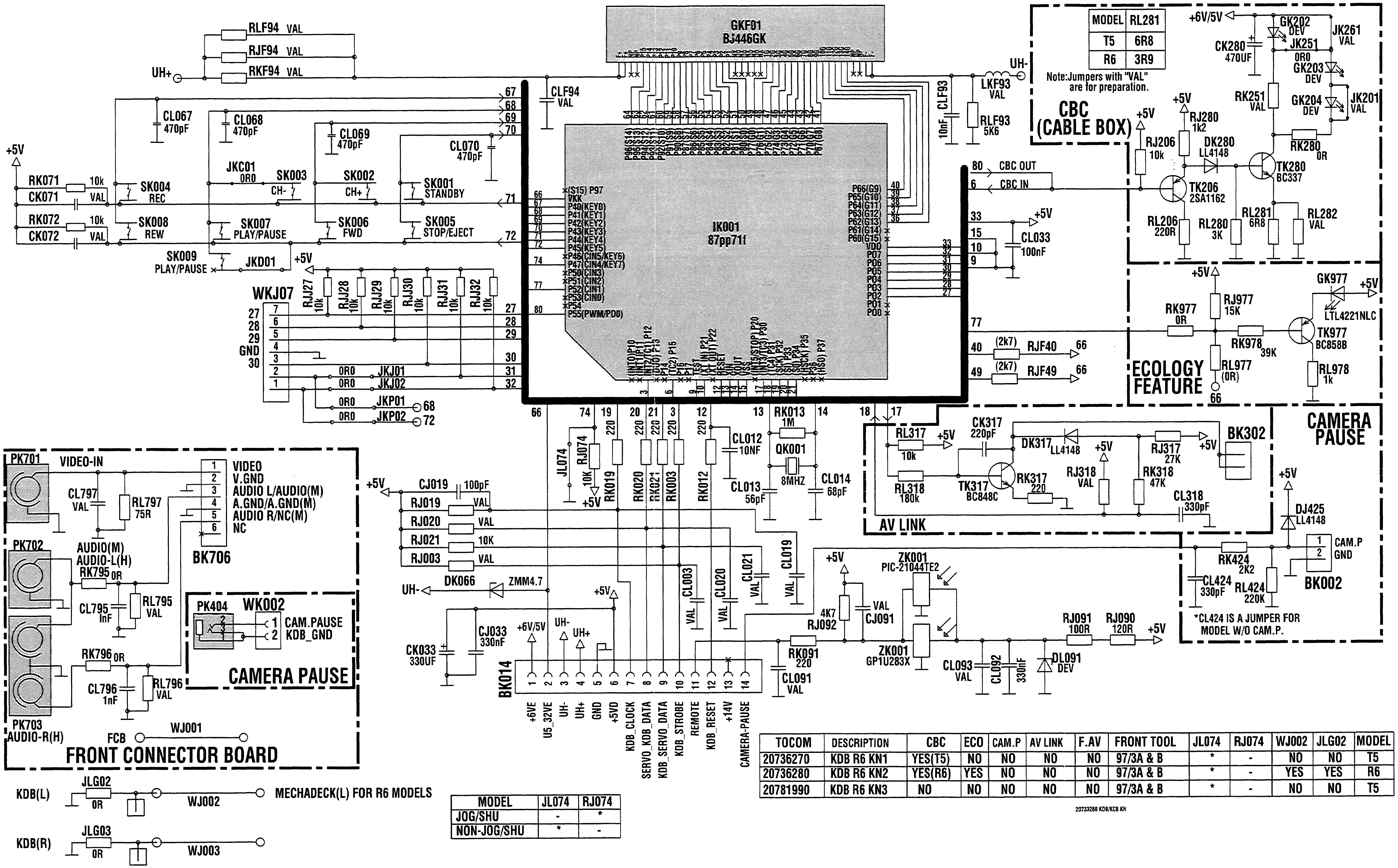

VIDEO IN (YELLOW)
PK701
AUDIO L(H) (WHITE)
PK702
AUDIO R(H) (RED)
AUDIO(M) (WHITE)
PK703
JJ002
WJ002
SK005 STANDBY
PCB FCB R5000 ED
20631410.00
BK003
JJ003
JJ004
BK706
JJ001
SK001 STOP/EJECT
WK003
CK033
CL033
ZK001
Gnd Vcc Vout
SK010 ADJUST
SK009 SELECT
POWER(H)
POWER(M)
STANDBY(H)
STANDBY(M)
HIFI(H)
PLAY(M)
PLAY(H)
TIMER(M)
TIMER(H)
RECORD(M)
RECORD(H)
PCB KDB R5000 ED
20631410.00
JJ005
JJ006
JJ007
JJ008
JJ009
JJ010
JJ011
JJ012
JJ013
JJ014
JJ015
JJ016
JJ017
SK006 CH+
SK007 CH-
SK002 PLAY/PAUSE
SK003 REWIND
SK004 FORWARD
SK008 RECORD
BK014
14
2
1

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


FDU05
CL797
RL797
PCB FCB R5000 ED
20631410.00
RK795
CL795
RL795
BK706
BK003
JK701
JL701
CL796
RL796
RK796
FDU04
BK014
14
13
2
1
RK001
JL101
RL002
RJ006
RJ004
IK002
16
9
1
8
RL003
RL004
JK010
RL001
JK007
JK008
RJ002
RJ003
JK009
RJ001
IK001
DK001
DK002
PCB KDB R5000 ED
20631410.00
FDU02
JK006
TKE03
JJS03
TKE04
JJS04
TKE05
TKE06
JJS02
TKE01
JJS01
TKE02
JK002
CJ033
Vout Vcc Gnd
Vout
Vcc
Gnd
RJ092
RJ091
CL092
RK091
CL091
WK003
JK001
FDU01

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

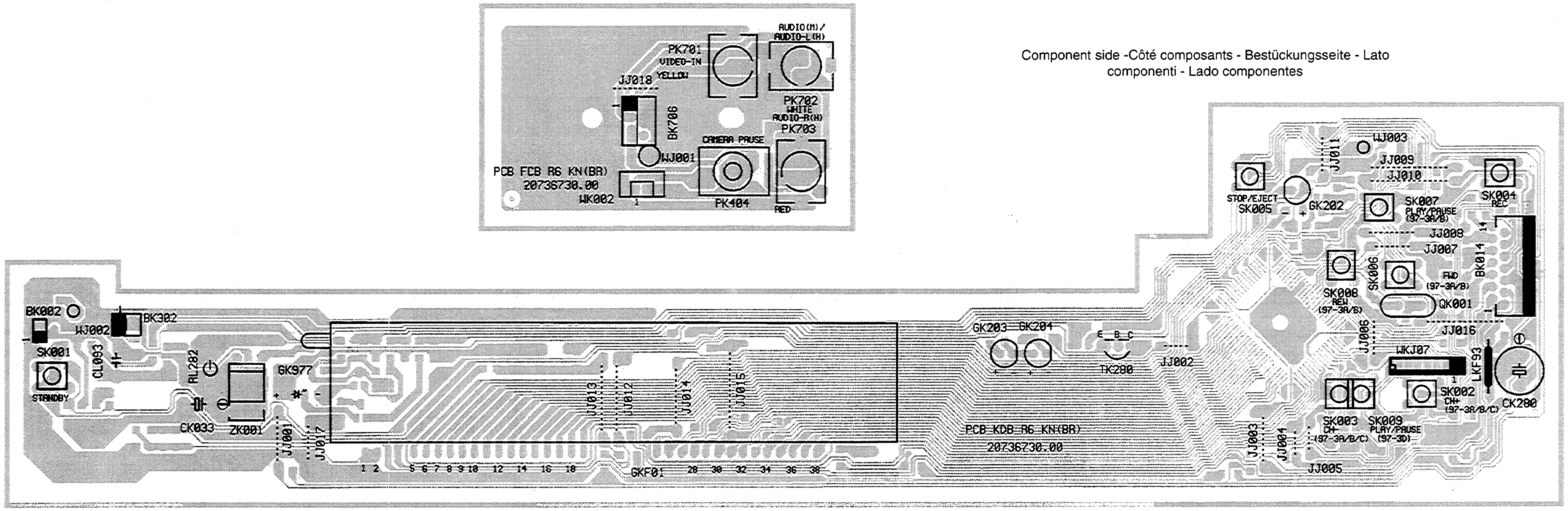

GKF01
BJ446GK
IK001
87pp71f
RLF94 VAL
RJF94 VAL
RKF94 VAL
UH+
UH-
CLF94 VAL
LKF93 VAL
RLF93 5K6
10nF CLF93
CL067 470pF
CL068 470pF
CL069 470pF
CL070 470pF
+5V
RK071 10k
CK071 VAL
RK072 10k
CK072 VAL
JKC01 0R0
SK004 REC
SK003 CH-
SK002 CH+
SK001 STANDBY
SK008 REW
SK007 PLAY/PAUSE
SK006 FWD
SK005 STOP/EJECT
SK009 PLAY/PAUSE
JKD01
WKJ07
RJ27 10k
RJ28 10k
RJ29 10k
RJ30 10k
RJ31 10k
RJ32 10k
GND
JKJ01 0R0
JKJ02 0R0
JKP01 0R0
JKP02 0R0
CBC OUT
CBC IN
CL033 100nF
RJF40 (2k7)
RJF49 (2k7)
MODEL RL281
T5 6R8
R6 3R9
Note:Jumpers with "VAL" are for preparation.
CBC (CABLE BOX)
+6V/5V
CK280 470UF
GK202 DEV
JK251 0R0
JK261 VAL
GK203 DEV
GK204 DEV
JK201 VAL
RK251 VAL
RJ280 1k2
RJ206 10k
DK280 LL4148
RK280 0R
TK280 BC337
TK206 2SA1162
RL206 220R
RL280 3K
RL281 6R8
RL282 VAL
RJ977 15K
RK977 0R
RK978 39K
RL977 (0R)
GK977 LTL4221NLC
TK977 BC858B
RL978 1k
ECOLOGY FEATURE
CAMERA PAUSE
BK302
RL317 10k
CK317 220pF
DK317 LL4148
RJ317 27K
RK318 47K
RJ318 VAL
RL318 180k
TK317 BC848C
RK317 220
CL318 330pF
DJ425 LL4148
AV LINK
RK424 2K2
CL424 330pF
RL424 220K
CAM.P
BK002
*CL424 IS A JUMPER FOR MODEL W/O CAM.P.
JL074
RJ074 10k
RK019 220
RK020 220
RK021 220
RK003 220
RK012 220
RK013 1M
QK001 8MHZ
CL012 10NF
CL013 56pF
CL014 68pF
PK701 VIDEO-IN
CL797 VAL
RL797 75R
PK702 AUDIO(M) AUDIO-L(H)
RK795 0R
CL795 1nF
RL795 VAL
RK796 0R
CL796 1nF
RL796 VAL
PK703 AUDIO-R(H)
FCB
WJ001
VIDEO
V.GND
AUDIO L/AUDIO(M)
A.GND/A.GND(M)
AUDIO R/NC(M)
NC
BK706
PK404
WK002
CAM.PAUSE
KDB_GND
CAMERA PAUSE
FRONT CONNECTOR BOARD
CJ019 100pF
RJ019 VAL
RJ020 VAL
RJ021 10K
RJ003 VAL
DK066 ZMM4.7
CK033 330UF
CJ033 330nF
BK014
CL003 VAL
CL020 VAL
CL021 VAL
CL019 VAL
ZK001 PIC-21044TE2
RJ092 4K7
CJ091 VAL
RK091 220
CL091 VAL
ZK001 GP1U283X
CL093 VAL
CL092 330nF
RJ091 100R
RJ090 120R
DL091 DEV
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
KDB(L)
JLG02 0R
WJ002
MECHADECK(L) FOR R6 MODELS
KDB(R)
JLG03 0R
WJ003

MODEL	JL074	RJ074
JOG/SHU	-	*
NON-JOG/SHU	*	-

TOCOM	DESCRIPTION	CBC	ECO	CAM.P	AV LINK	F.AV	FRONT TOOL	JL074	RJ074	WJ002	JLG02	MODEL
20736270	KDB R6 KN1	YES(T5)	NO	NO	NO	NO	97/3A & B	*	-	NO	NO	T5
20736280	KDB R6 KN2	YES(R6)	YES	NO	NO	NO	97/3A & B	*	-	YES	YES	R6
20781990	KDB R6 KN3	NO	NO	NO	NO	NO	97/3A & B	*	-	NO	NO	T5

20733280 KDB/KCB KN

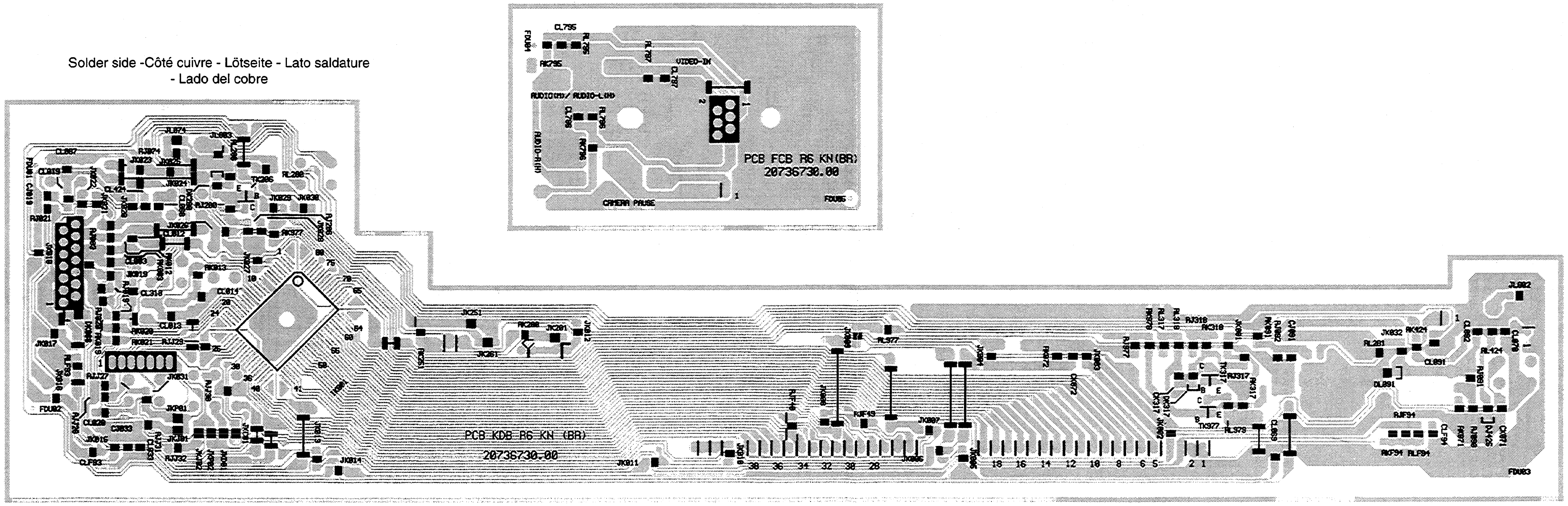
KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


AUDIO(M)/
AUDIO-L(H)
PK701
VIDEO-IN
YELLOW
JJ018
BK706
PK702
WHITE
AUDIO-R(H)
PK703
CAMERA PAUSE
WJ001
PCB FCB R6 KN(BR)
20736730.00
WK002
PK404
RED

BK002
WJ002
BK302
SK001
STANDBY
CL093
RL282
GK977
CK033
ZK001
JJ001
JJ017
JJ013
JJ012
JJ014
JJ015
GKF01
GK203
GK204
TK280
JJ002
PCB KDB R6 KN(BR)
20736730.00
JJ003
JJ004
JJ005
WJ003
JJ011
JJ009
JJ010
STOP/EJECT
SK005
GK202
SK007
PLAY/PAUSE
(97-3A/B)
SK004
REC
JJ008
JJ007
BK014
SK006
SK008
REW
(97-3A/B)
FWD
(97-3A/B)
QK001
JJ016
JJ006
WKJ07
LKF93
CK280
SK003
CH-
(97-3A/B/C)
SK009
PLAY/PAUSE
(97-3D)
SK002
CH+
(97-3A/B/C)

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

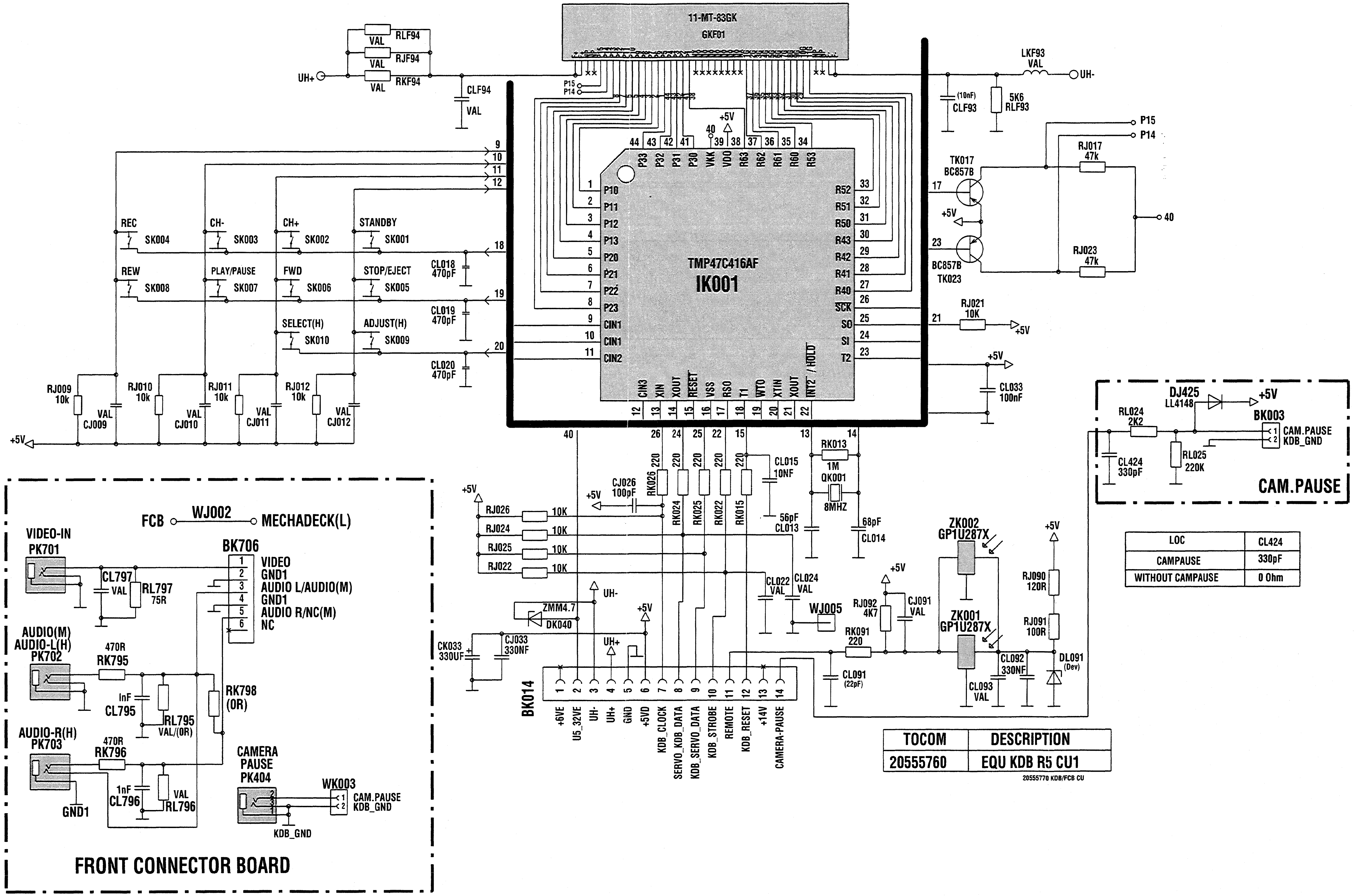
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


CL795
FDU04
RK795
VIDEO-IN
AUDIO(M)/ AUDIO-L(H)
AUDIO-R(H)
PCB FCB R6 KN(BR)
20736730.00
CAMERA PAUSE
FDU05

PCB KDB R6 KN (BR)
20736730.00
FDU02
FDU03
38 36 34 32 30 28
18 16 14 12 10 8 6 5
2 1

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

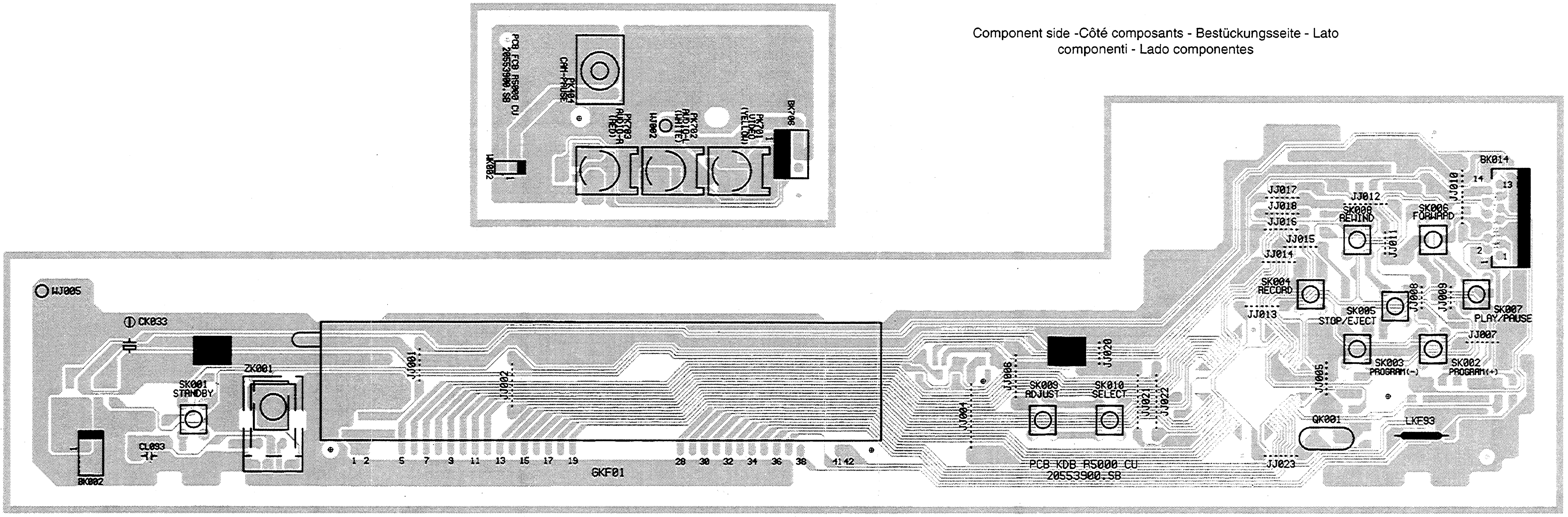

11-MT-83GK
GKF01
RLF94
RJF94
RKF94
VAL
UH+
CLF94
P15
P14
LKF93
UH-
(10nF)
CLF93
5K6
RLF93
TMP47C416AF
IK001
P33 P32 P31 P30 VKK VDD R63 R62 R61 R60 R53
P10 P11 P12 P13 P20 P21 P22 P23 CIN1 CIN1 CIN2
R52 R51 R50 R43 R42 R41 R40 SCK SO SI T2
CIN3 XIN XOUT RESET VSS RSO T1 WTO XTIN XOUT INT2 / HOLD
+5V
TK017
BC857B
BC857B
TK023
RJ017
47k
RJ023
47k
RJ021
10K
CL033
100nF
REC
SK004
CH-
SK003
CH+
SK002
STANDBY
SK001
REW
SK008
PLAY/PAUSE
SK007
FWD
SK006
STOP/EJECT
SK005
SELECT(H)
SK010
ADJUST(H)
SK009
CL018
470pF
CL019
470pF
CL020
470pF
RJ009
10k
RJ010
10k
RJ011
10k
RJ012
10k
CJ009
CJ010
CJ011
CJ012
RK013
1M
QK001
8MHZ
CL015
10NF
56pF
CL013
68pF
CL014
CJ026
100pF
RK026
RK024
RK025
RK022
RK015
220
RJ026
RJ024
RJ025
RJ022
10K
CL022
CL024
WJ005
ZMM4.7
DK040
CK033
330UF
CJ033
330NF
BK014
+6VE
U5_32VE
UH-
UH+
GND
+5VD
KDB_CLOCK
SERVO_KDB_DATA
KDB_SERVO_DATA
KDB_STROBE
REMOTE
KDB_RESET
+14V
CAMERA-PAUSE
RJ092
4K7
CJ091
RK091
220
CL091
(22pF)
ZK002
GP1U287X
ZK001
GP1U287X
RJ090
120R
RJ091
100R
CL092
330NF
CL093
DL091
(Dev)
DJ425
LL4148
RL024
2K2
CL424
330pF
RL025
220K
BK003
CAM.PAUSE
KDB_GND
CAM.PAUSE
FCB
WJ002
MECHADECK(L)
VIDEO-IN
PK701
CL797
RL797
75R
BK706
VIDEO
GND1
AUDIO L/AUDIO(M)
GND1
AUDIO R/NC(M)
NC
AUDIO(M)
AUDIO-L(H)
PK702
470R
RK795
InF
CL795
RL795
VAL/(0R)
RK798
(0R)
AUDIO-R(H)
PK703
470R
RK796
1nF
CL796
RL796
GND1
CAMERA PAUSE
PK404
WK003
CAM.PAUSE
KDB_GND
FRONT CONNECTOR BOARD

LOC	CL424
CAMPAUSE	330pF
WITHOUT CAMPAUSE	0 Ohm

TOCOM	DESCRIPTION
20555760	EQU KDB R5 CU1

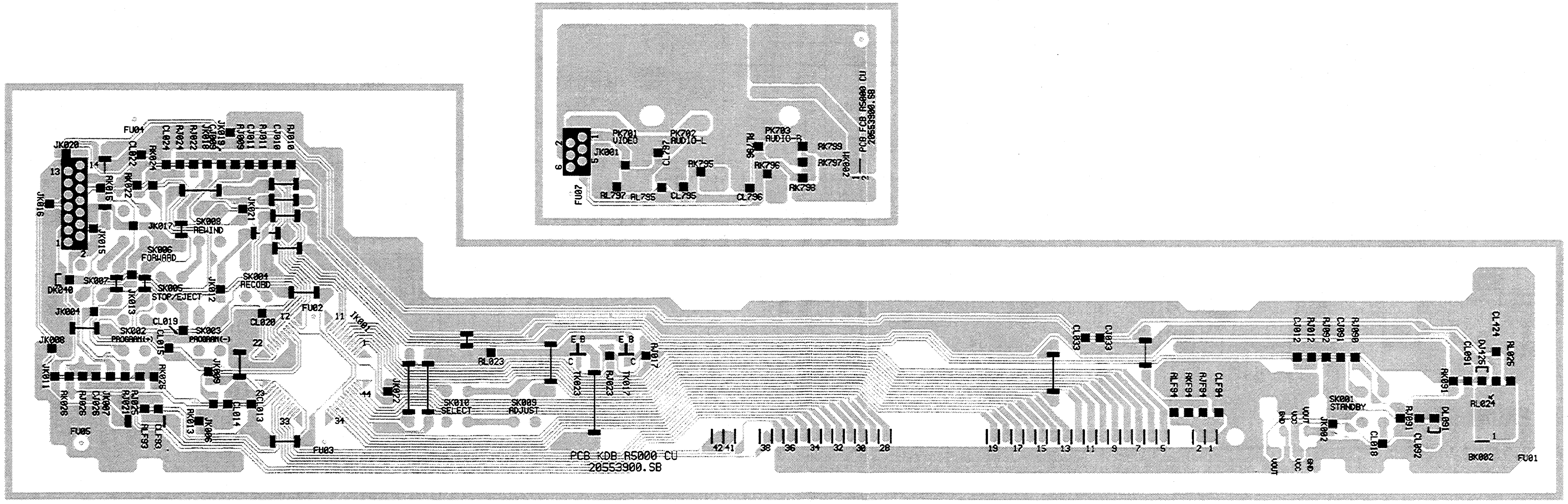
20555770 KDB/FCB CU

KEYBOARD WITH DISPLAY - PLATINE DE COMMANDES AVEC AFFICHEUR - BEDIENTEIL MIT DISPLAY - TASTIERA CON DISPLAY - PLATINA MANDOS CON VISUALIZADOR


PCB FCB R5000 CU
20553900.SB
WJ002
PK703 AUDIO-R (RED)
PK702 AUDIO-L (WHITE)
PK701 VIDEO (YELLOW)
BK706
WJ005
CK033
SK001 STANDBY
ZK001
CL033
BK002
GKF01
JJ001
JJ002
JJ004
JJ008
JJ020
SK009 ADJUST
SK010 SELECT
JJ021
JJ022
JJ023
QK001
LKF93
PCB KDB R5000 CU
20553900.SB
JJ017
JJ018
JJ016
JJ015
JJ014
JJ013
JJ012
SK008 REWIND
SK006 FORWARD
JJ011
JJ010
BK014
SK004 RECORD
SK005 STOP/EJECT
JJ008
JJ009
SK007 PLAY/PAUSE
JJ007
SK003 PROGRAM(-)
SK002 PROGRAM(+)
JJ005
1 2 5 7 9 11 13 15 17 19
28 30 32 34 36 38 41 42

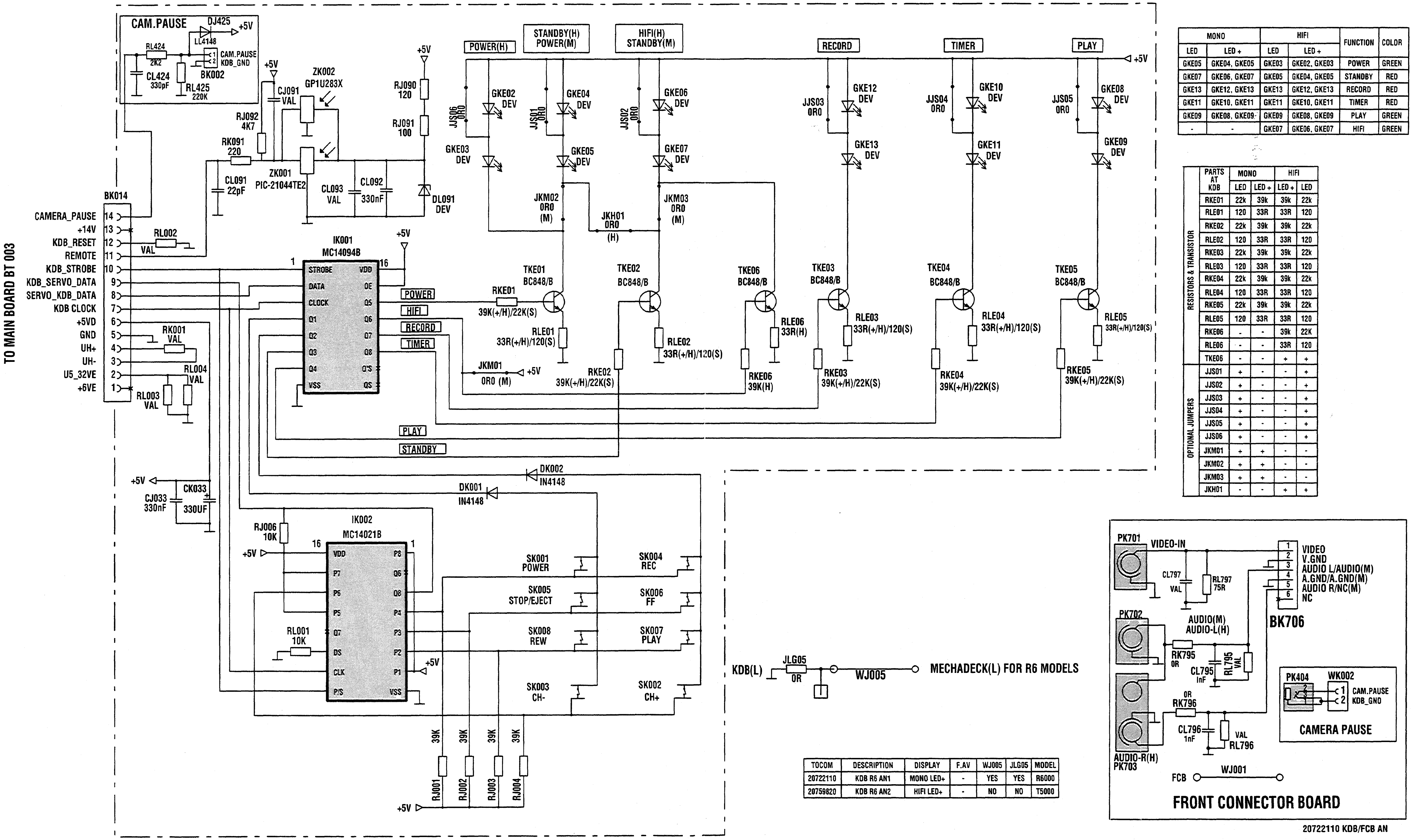
Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre


PCB FCB R5000 CU
20553900.SB
JK001
PK701 VIDEO
PK702 AUDIO-L
PK703 AUDIO-R
RK799
RK797
RK798
RK795
RK796
RL796
CL797
RL797
RL795
CL795
CL796
FU07
HK002
JK020
JK016
FU04
SK008 REWIND
SK006 FORWARD
SK007
SK005 STOP/EJECT
SK004 RECORD
SK002 PROGRAM(+)
SK003 PROGRAM(-)
DK040
JK004
JK008
JK011
FU02
FU05
FU03
SK010 SELECT
SK009 ADJUST
RL023
TK023
TK017
PCB KDB R5000 CU
20553900.SB
CL033
SK001 STANDBY
BK002
FU01
RL024
RL026
CL424
42 41 38 36 34 32 30 28
19 17 15 13 11 9 7 5 2 1

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


CAM.PAUSE
DJ425
LL4148
+5V
RL424
2K2
CL424
330pF
RL425
220K
CAM.PAUSE
KDB_GND
BK002
TO MAIN BOARD BT 003
BK014
CAMERA_PAUSE 14
+14V 13
KDB_RESET 12
REMOTE 11
KDB_STROBE 10
KDB_SERVO_DATA 9
SERVO_KDB_DATA 8
KDB CLOCK 7
+5VD 6
GND 5
UH+ 4
UH- 3
U5_32VE 2
+6VE 1
RL002
VAL
RK001
VAL
RL004
VAL
RL003
VAL
RJ092
4K7
RK091
220
CJ091
VAL
ZK002
GP1U283X
ZK001
PIC-21044TE2
CL091
22pF
CL093
VAL
CL092
330nF
RJ090
120
RJ091
100
DL091
DEV
IK001
MC14094B
STROBE
DATA
CLOCK
Q1
Q2
Q3
Q4
VSS
VDD
OE
Q5
Q6
Q7
Q8
Q'S
QS
POWER
HIFI
RECORD
TIMER
PLAY
STANDBY
POWER(H)
STANDBY(H)
POWER(M)
HIFI(H)
STANDBY(M)
RECORD
TIMER
PLAY
+5V
JJS06 ORO
GKE02 DEV
GKE03 DEV
JJS01 ORO
GKE04 DEV
GKE05 DEV
JJS02 ORO
GKE06 DEV
GKE07 DEV
JJS03 ORO
GKE12 DEV
GKE13 DEV
JJS04 ORO
GKE10 DEV
GKE11 DEV
JJS05 ORO
GKE08 DEV
GKE09 DEV
JKM02 ORO (M)
JKH01 ORO (H)
JKM03 ORO (M)
TKE01 BC848/B
RKE01 39K(+/H)/22K(S)
RLE01 33R(+/H)/120(S)
TKE02 BC848/B
RKE02 39K(+/H)/22K(S)
RLE02 33R(+/H)/120(S)
TKE06 BC848/B
RLE06 33R(H)
RKE06 39K(H)
TKE03 BC848/B
RLE03 33R(+/H)/120(S)
RKE03 39K(+/H)/22K(S)
TKE04 BC848/B
RLE04 33R(+/H)/120(S)
RKE04 39K(+/H)/22K(S)
TKE05 BC848/B
RLE05 33R(+/H)/120(S)
RKE05 39K(+/H)/22K(S)
JKM01 ORO (M)
+5V
CJ033 330nF
CK033 330UF
DK002 IN4148
DK001 IN4148
RJ006 10K
IK002
MC14021B
VDD
P7
P6
P5
Q7
DS
CLK
P/S
P8
Q6
Q8
P4
P3
P2
P1
VSS
RL001 10K
SK001 POWER
SK004 REC
SK005 STOP/EJECT
SK006 FF
SK008 REW
SK007 PLAY
SK003 CH-
SK002 CH+
39K
RJ001
RJ002
RJ003
RJ004
KDB(L)
JLG05
0R
WJ005
MECHADECK(L) FOR R6 MODELS
PK701 VIDEO-IN
CL797 VAL
RL797 75R
1 VIDEO
2 V.GND
3 AUDIO L/AUDIO(M)
4 A.GND/A.GND(M)
5 AUDIO R/NC(M)
6 NC
BK706
PK702
AUDIO(M)
AUDIO-L(H)
RK795 0R
CL795 1nF
RL795 VAL
0R
RK796
CL796 1nF
VAL RL796
AUDIO-R(H)
PK703
FCB
WJ001
PK404
WK002
1 CAM.PAUSE
2 KDB_GND
CAMERA PAUSE
FRONT CONNECTOR BOARD

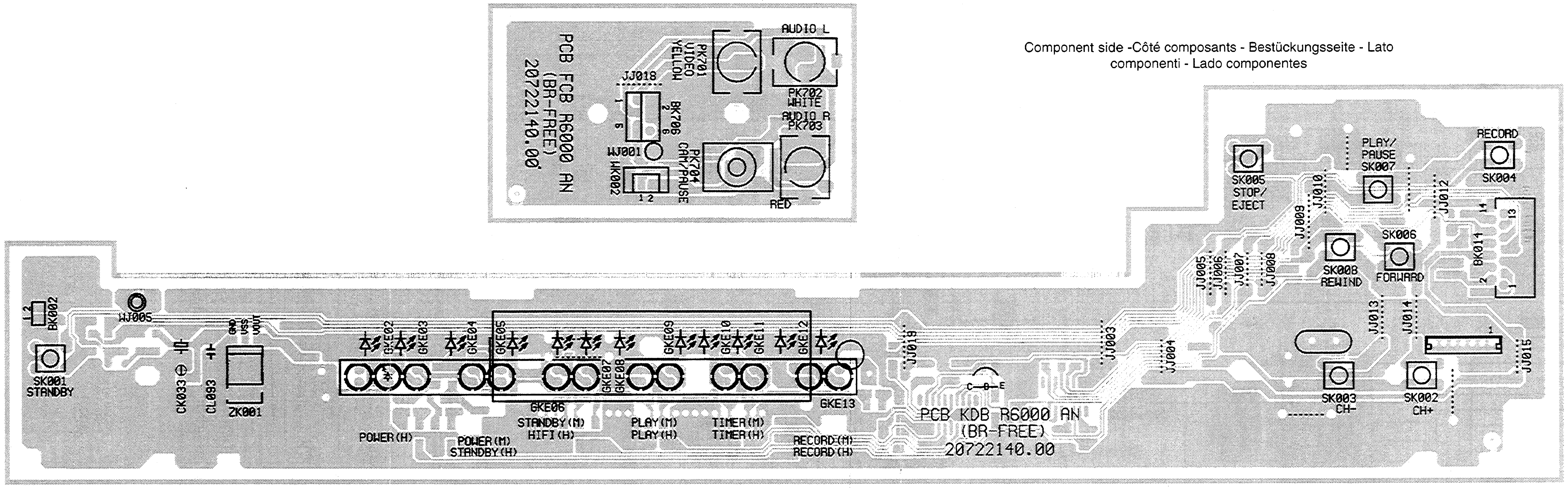
MONO		HIFI		FUNCTION	COLOR
LED	LED +	LED	LED +		
GKE05	GKE04, GKE05	GKE03	GKE02, GKE03	POWER	GREEN
GKE07	GKE06, GKE07	GKE05	GKE04, GKE05	STANDBY	RED
GKE13	GKE12, GKE13	GKE13	GKE12, GKE13	RECORD	RED
GKE11	GKE10, GKE11	GKE11	GKE10, GKE11	TIMER	RED
GKE09	GKE08, GKE09	GKE09	GKE08, GKE09	PLAY	GREEN
-	-	GKE07	GKE06, GKE07	HIFI	GREEN

	PARTS AT KDB	MONO		HIFI	
		LED	LED +	LED +	LED
RESISTORS & TRANSISTOR	RKE01	22k	39k	39k	22k
	RLE01	120	33R	33R	120
	RKE02	22k	39k	39k	22k
	RLE02	120	33R	33R	120
	RKE03	22k	39k	39k	22k
	RLE03	120	33R	33R	120
	RKE04	22k	39k	39k	22k
	RLE04	120	33R	33R	120
	RKE05	22k	39k	39k	22k
	RLE05	120	33R	33R	120
	RKE06	-	-	39k	22K
	RLE06	-	-	33R	120
	TKE06	-	-	+	+
OPTIONAL JUMPERS	JJS01	+	-	-	+
	JJS02	+	-	-	+
	JJS03	+	-	-	+
	JJS04	+	-	-	+
	JJS05	+	-	-	+
	JJS06	+	-	-	+
	JKM01	+	+	-	-
	JKM02	+	+	-	-
	JKM03	+	+	-	-
	JKH01	-	-	+	+

TOCOM	DESCRIPTION	DISPLAY	F.AV	WJ005	JLG05	MODEL
20722110	KDB R6 AN1	MONO LED+	-	YES	YES	R6000
20759820	KDB R6 AN2	HIFI LED+	-	NO	NO	T5000

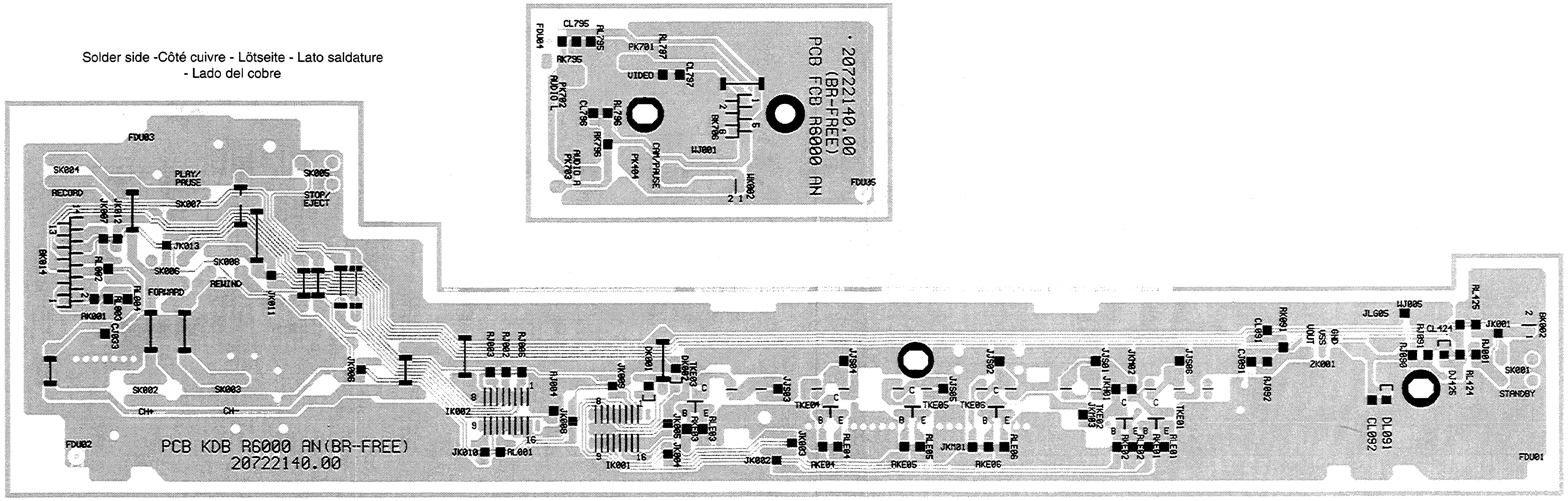
20722110 KDB/FCB AN

KEYBOARD WITHOUT DISPLAY - PLATINE DE COMMANDES SANS AFFICHEUR - BEDIENTEIL OHNE DISPLAY - TASTIERA SENZA DISPLAY - PLATINA MANDOS SIN VISUALIZADOR


PCB FCB R6000 AN
(BR-FREE)
20722140.00
AUDIO L
PK701
VIDEO
YELLOW
PK702
WHITE
AUDIO R
PK703
RED
JJ018
BK706
PK704
CAM/PAUSE
WJ001
WK002

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes

BK002
WJ005
SK001
STANDBY
CK033
CL083
ZK001
GKE02
GKE03
GKE04
GKE05
GKE06
GKE07
GKE08
GKE09
GKE10
GKE11
GKE12
GKE13
POWER (H)
POWER (M)
STANDBY (H)
STANDBY (M)
HIFI (H)
PLAY (M)
PLAY (H)
TIMER (M)
TIMER (H)
RECORD (M)
RECORD (H)
PCB KDB R6000 AN
(BR-FREE)
20722140.00
JJ016
JJ003
JJ004
SK005
STOP/
EJECT
PLAY/
PAUSE
SK007
RECORD
SK004
JJ009
JJ010
JJ012
JJ005
JJ006
JJ007
JJ008
SK008
REWIND
SK006
FORWARD
BK014
JJ013
JJ014
JJ015
SK003
CH-
SK002
CH+

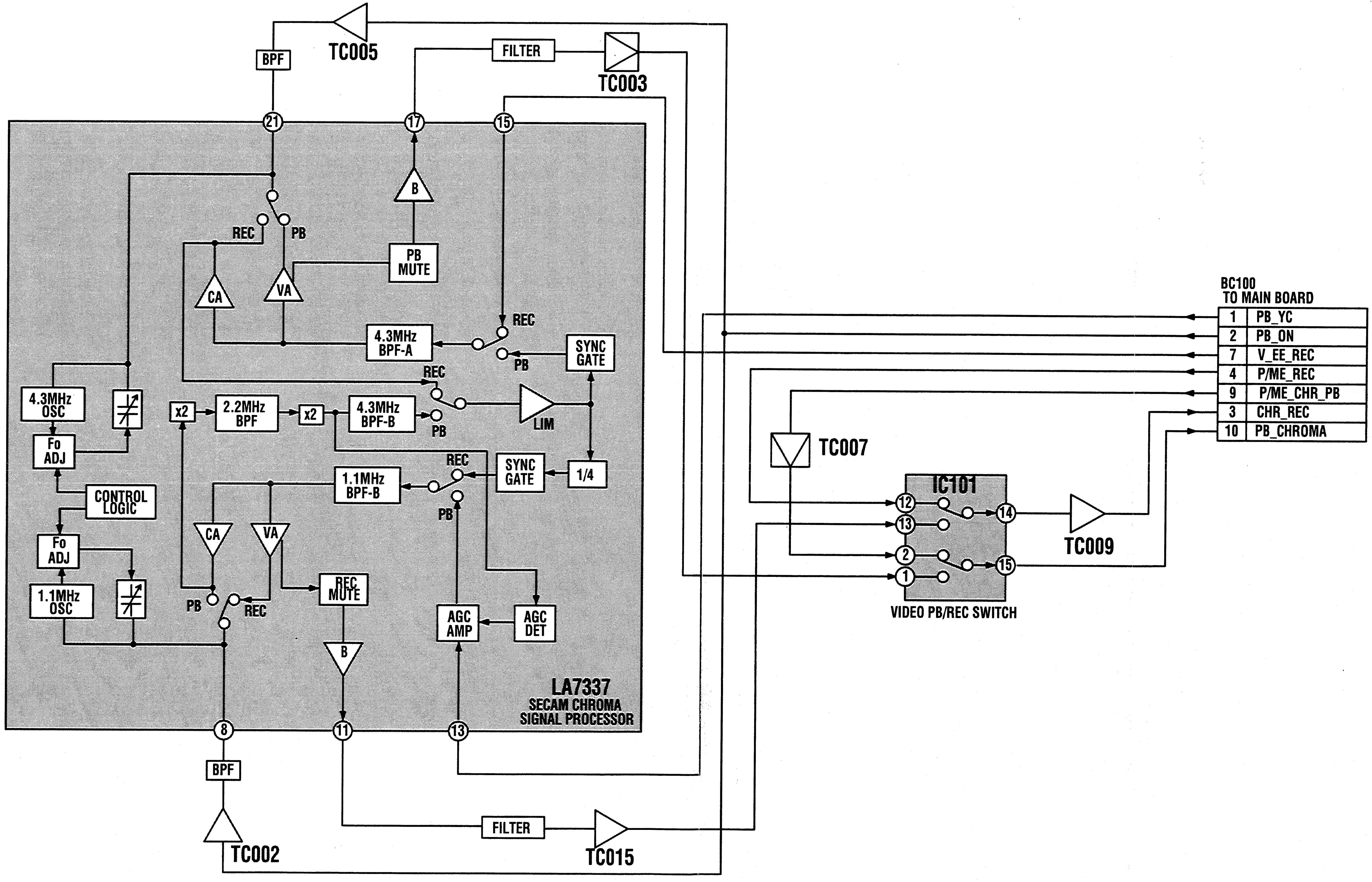

20722140.00
(BR-FREE)
PCB FCB R6000 AN
CL795
RL795
RK795
FDU04
PK701
RL797
CL797
VIDEO
PK702
AUDIO L
CL796
RL796
RK796
AUDIO R
PK703
PK404
CAM/PAUSE
BK706
WJ001
WK002
FDU05

Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre

FDU03
SK004
RECORD
PLAY/
PAUSE
SK007
SK005
STOP/
EJECT
JK007
JK012
JK013
BK014
SK006
SK008
FORWARD
REWIND
JK011
RK001
SK002
CH+
SK003
CH-
FDU02
PCB KDB R6000 AN(BR-FREE)
20722140.00
JK006
IK002
JK010
RL001
IK001
DK001
TKE03
TKE04
TKE05
TKE06
RKE04
RKE05
RKE06
JKM01
JK002
JLG05
WJ005
JK001
RL426
CL424
RJ001
SK001
STANDBY
ZK001
DL091
CL092
BK002
FDU01

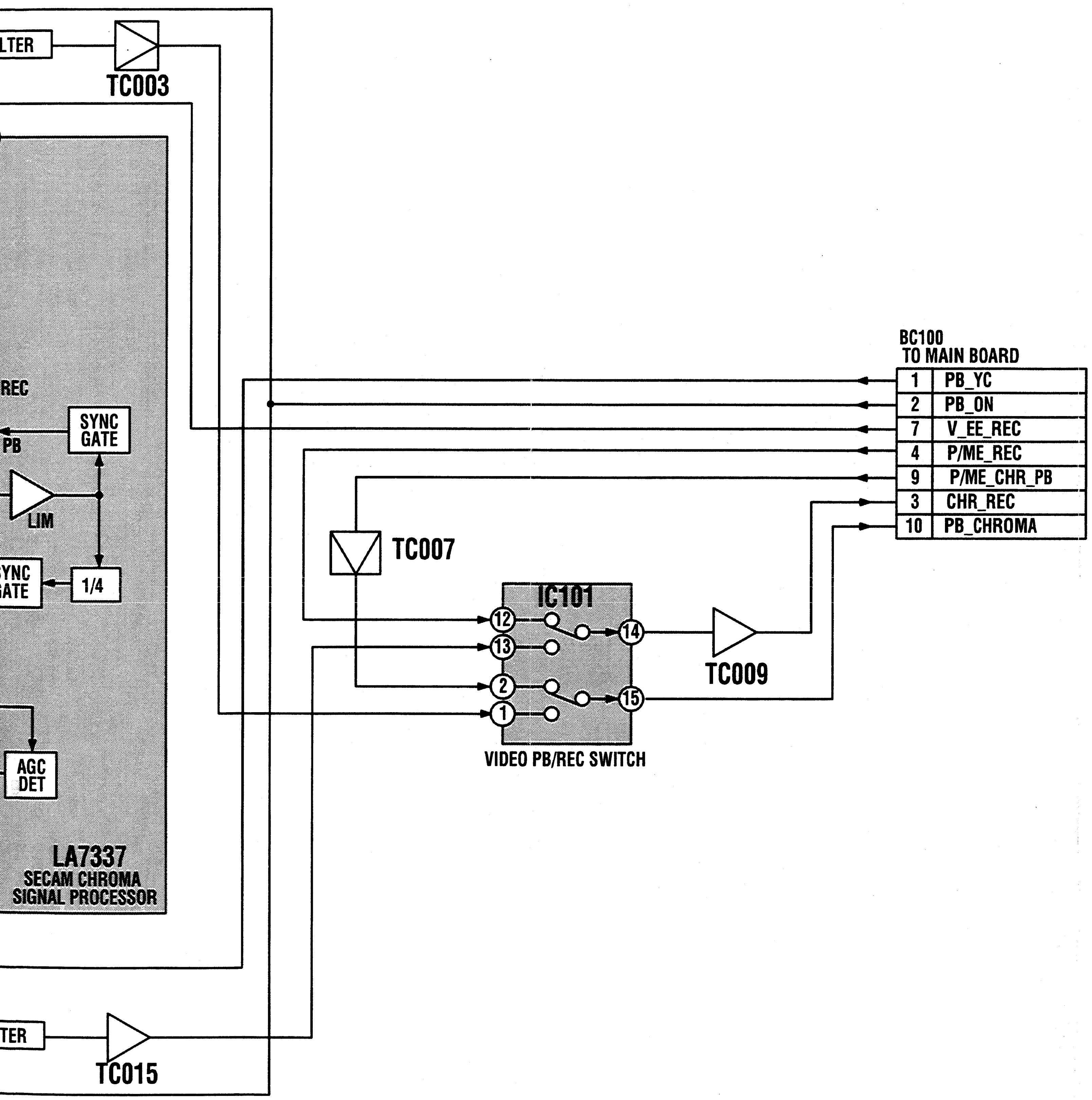
SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


TC005
BPF
FILTER
TC003
21
17
15
REC
PB
B
PB MUTE
CA
VA
4.3MHz BPF-A
REC
PB
SYNC GATE
REC
4.3MHz OSC
Fo ADJ
x2
2.2MHz BPF
x2
4.3MHz BPF-B
PB
LIM
REC
SYNC GATE
1/4
1.1MHz BPF-B
PB
CONTROL LOGIC
CA
VA
Fo ADJ
1.1MHz OSC
PB
REC
REC MUTE
AGC AMP
AGC DET
B
LA7337
SECAM CHROMA SIGNAL PROCESSOR
8
11
13
BPF
TC002
FILTER
TC015
TC007
IC101
12
13
2
1
14
15
TC009
VIDEO PB/REC SWITCH
BC100
TO MAIN BOARD
1 PB_YC
2 PB_ON
7 V_EE_REC
4 P/ME_REC
9 P/ME_CHR_PB
3 CHR_REC
10 PB_CHROMA

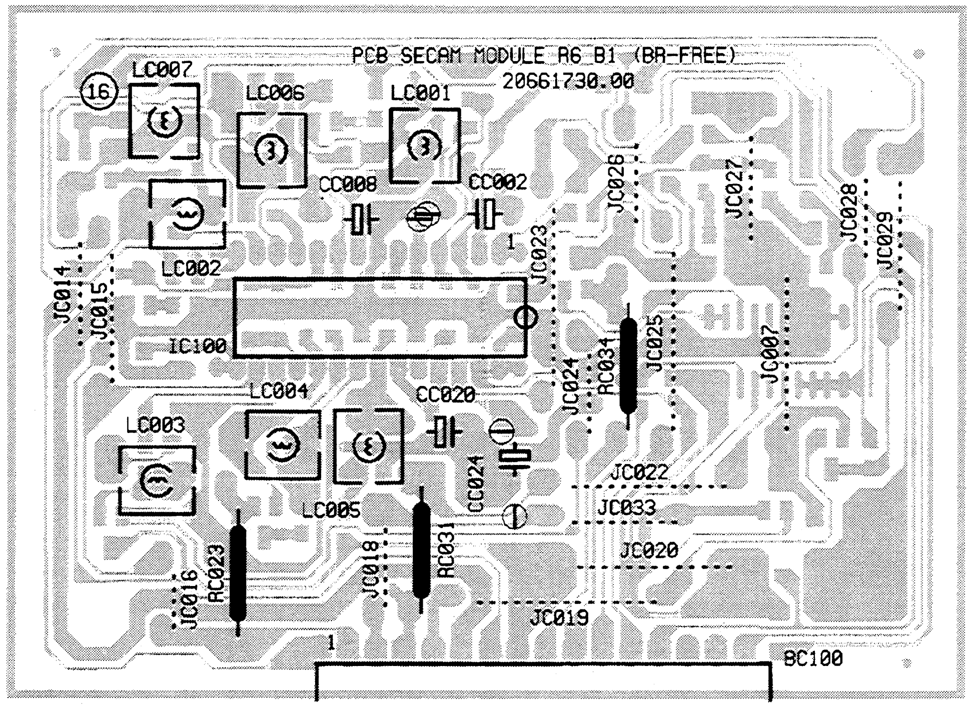
ECAM - PIASTRA SECAM - PLATINA SECAM

CHEMA A BLOCCHI - ESQUEMA DE BLOQUES



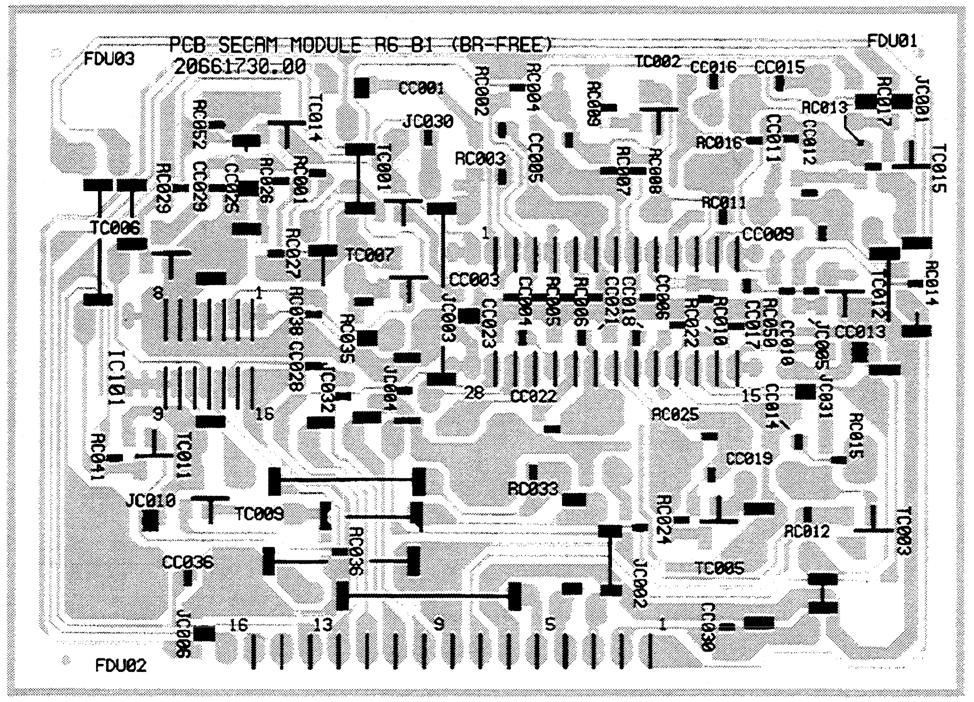
LTER
TC003
REC
SYNC GATE
PB
LIM
YNC ATE
1/4
AGC DET
LA7337
SECAM CHROMA SIGNAL PROCESSOR
TER
TC015
TC007
IC101
12
13
2
1
14
15
VIDEO PB/REC SWITCH
TC009
BC100
TO MAIN BOARD
1 PB_YC
2 PB_ON
7 V_EE_REC
4 P/ME_REC
9 P/ME_CHR_PB
3 CHR_REC
10 PB_CHROMA

Component side -Côté composants - Bestückungsseite - Lato componenti - Lado componentes



PCB SECAM MODULE R6 B1 (BR-FREE)
20661730.00
16
LC007
LC006
LC001
LC002
CC008
CC002
IC100
LC004
CC020
LC003
LC005
CC024
JC014
JC015
JC016
RC023
JC018
RC031
JC019
JC020
JC033
JC022
JC023
JC024
RC034
JC025
JC026
JC027
JC028
JC029
JC007
BC100
1

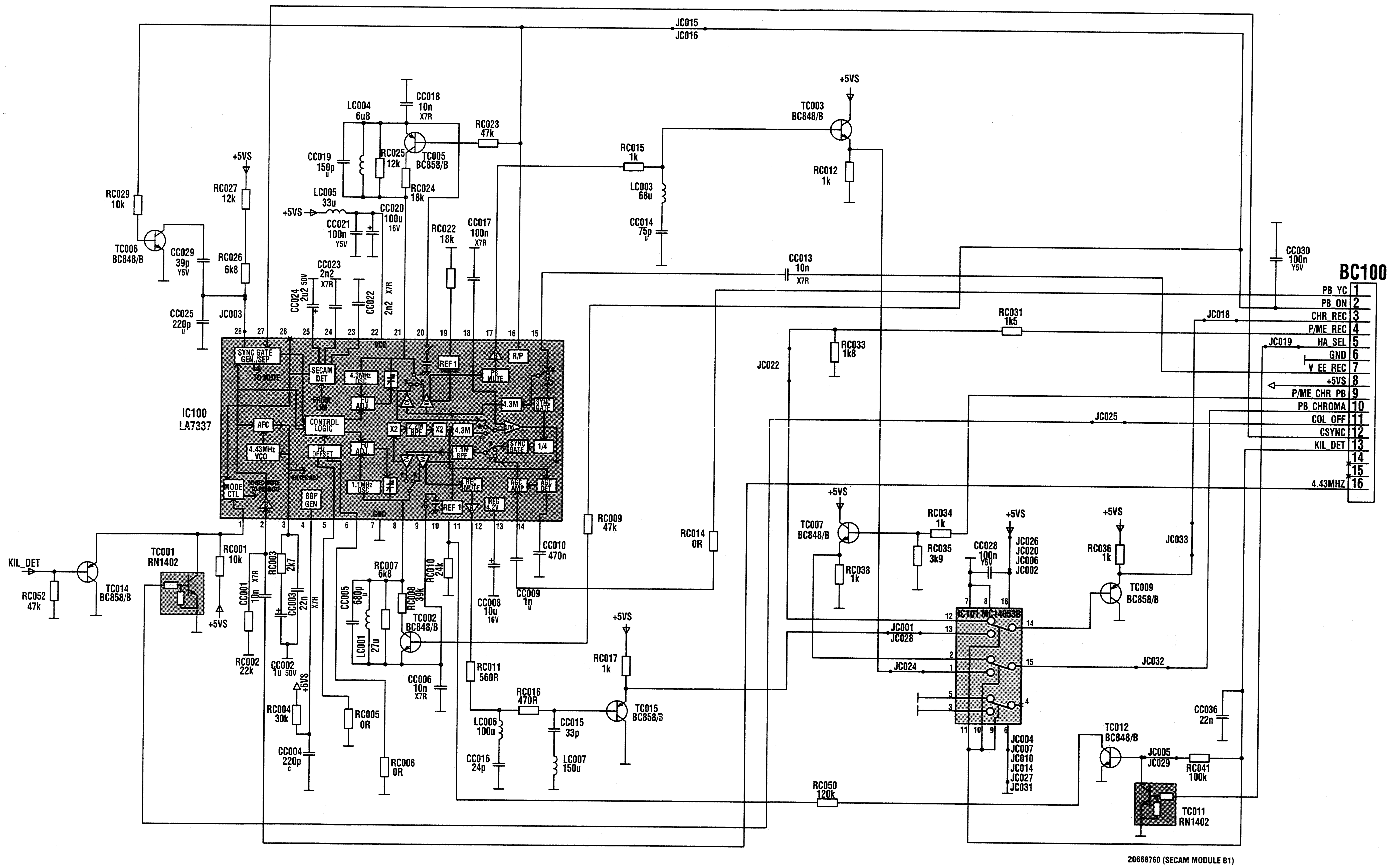
Solder side -Côté cuivre - Lötseite - Lato saldature - Lado del cobre



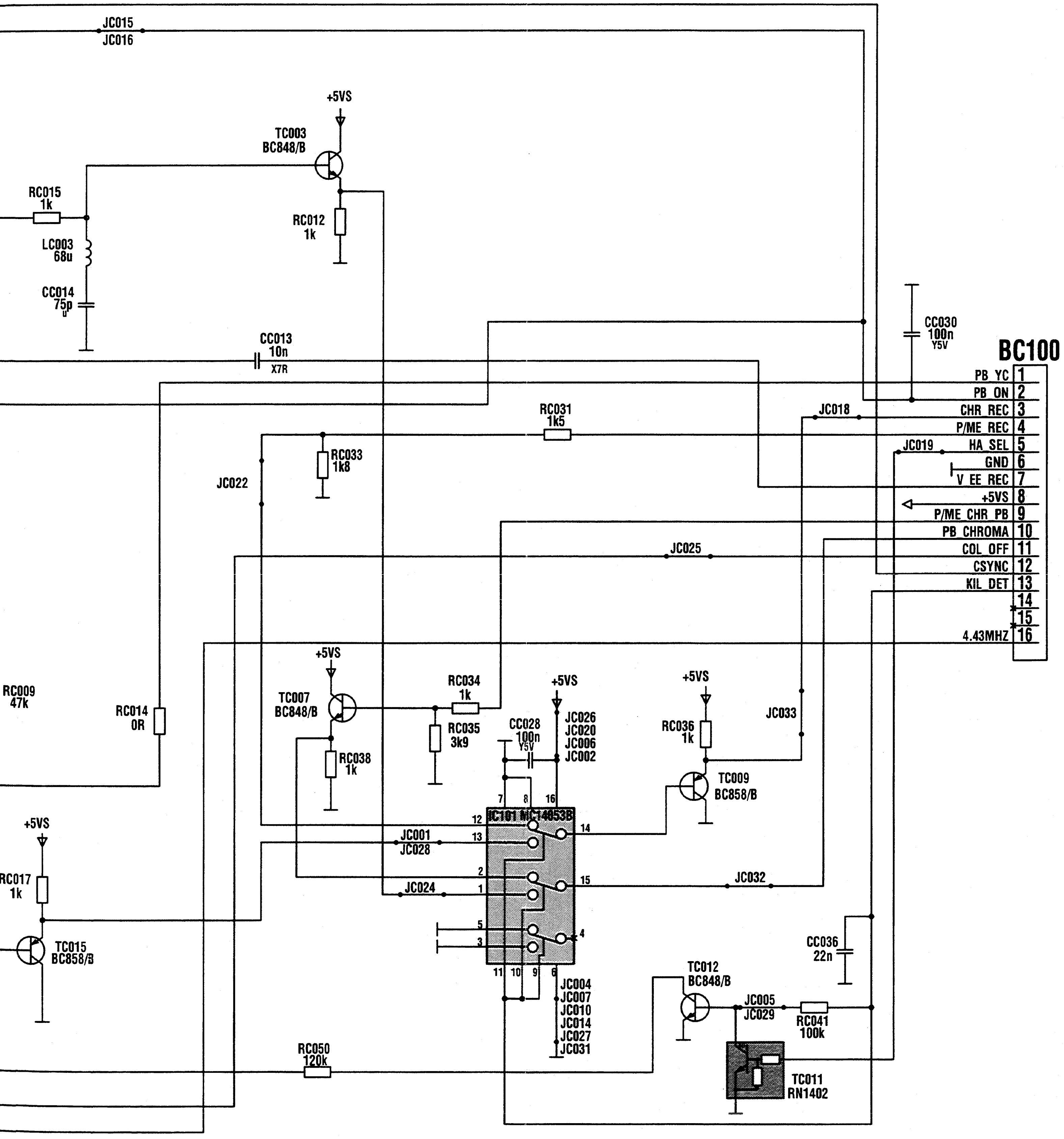
PCB SECAM MODULE R6 B1 (BR-FREE)
20661730.00
FDU01
FDU02
FDU03
IC101
TC001
TC002
TC003
TC005
TC006
TC007
TC009
TC011
TC012
TC014
TC015
CC001
CC009
CC015
CC016
CC019
CC022
CC036
RC003
RC011
RC012
RC013
RC016
RC024
RC025
RC033
RC036
RC041
JC001
JC002
JC006
JC010
JC030
16
13
9
5
1
28
15
8

SECAM SUB BOARD - PLATINE SECAM - SUB MODUL SECAM - PIASTRA SECAM - PLATINA SECAM

SCHEMATIC DIAGRAM - SCHEMA DE PRINCIPE - SCHALTBILD - ESQUEMA


IC100
LA7337
BC100
PB YC 1
PB ON 2
CHR REC 3
P/ME REC 4
HA SEL 5
GND 6
V EE REC 7
+5VS 8
P/ME CHR PB 9
PB CHROMA 10
COL OFF 11
CSYNC 12
KIL DET 13
14
15
4.43MHZ 16
IC101 MC14053B
KIL_DET
JC015
JC016
JC003
JC018
JC019
JC022
JC025
JC033
JC032
JC024
JC001
JC028
JC005
JC029
JC026 JC020 JC006 JC002
JC004 JC007 JC010 JC014 JC027 JC031
TC001 RN1402
TC002 BC848/B
TC003 BC848/B
TC005 BC858/B
TC006 BC848/B
TC007 BC848/B
TC009 BC858/B
TC011 RN1402
TC012 BC848/B
TC014 BC858/B
TC015 BC858/B
RC001 10k
RC002 22k
RC003 2k7
RC004 30k
RC005 0R
RC006 0R
RC007 6k8
RC008 39k
RC009 47k
RC010 24k
RC011 560R
RC012 1k
RC014 0R
RC015 1k
RC016 470R
RC017 1k
RC022 18k
RC023 47k
RC024 18k
RC025 12k
RC026 6k8
RC027 12k
RC029 10k
RC031 1k5
RC033 1k8
RC034 1k
RC035 3k9
RC036 1k
RC038 1k
RC041 100k
RC050 120k
RC052 47k
CC001 10n X7R
CC002 1u 50V
CC003 22n
CC004 220p
CC005 680p
CC006 10n X7R
CC008 10u 16V
CC009 1n
CC010 470n
CC013 10n X7R
CC014 75p
CC015 33p
CC016 24p
CC017 100n X7R
CC018 10n X7R
CC019 150p
CC020 100u 16V
CC021 100n Y5V
CC022 2n2 X7R
CC023 2n2 X7R
CC024 2u2 50V
CC025 220p
CC028 100n Y5V
CC029 39p Y5V
CC030 100n Y5V
CC036 22n
LC001 27u
LC003 68u
LC004 6u8
LC005 33u
LC006 100u
LC007 150u
+5VS
SYNC GATE GEN./SEP
TO MUTE
SECAM DET
4.3MHz OSC
FROM LIM
FQ ADJ
REF 1
PB MUTE
R/P
4.3M
SYNC GATE
AFC
CONTROL LOGIC
X2
2.2M BPF
X2
4.3M
LIM
4.43MHz VCO
FQ OFFSET
FQ ADJ
1.1M BPF
SYNC GATE
1/4
FILTER ADJ
MODE CTL
TO REC MUTE
TO PB MUTE
BGP GEN
1.1MHz OSC
REC MUTE
AGC AMP
AGC DET
REF 1
REG 4.2V
VCC
GND
20668760 (SECAM MODULE B1)

PIASTRA SECAM - PLATINA SECAM



JC015
JC016
+5VS
TC003
BC848/B
RC015
1k
RC012
1k
LC003
68u
CC014
75p
CC013
10n
X7R
CC030
100n
Y5V
BC100
PB YC 1
PB ON 2
CHR REC 3
P/ME REC 4
HA SEL 5
GND 6
V EE REC 7
+5VS 8
P/ME CHR PB 9
PB CHROMA 10
COL OFF 11
CSYNC 12
KIL DET 13
14
15
4.43MHZ 16
RC031
1k5
JC018
JC019
RC033
1k8
JC022
JC025
RC009
47k
RC014
0R
TC007
BC848/B
RC034
1k
RC035
3k9
RC038
1k
CC028
100n
Y5V
JC026
JC020
JC006
JC002
RC036
1k
JC033
TC009
BC858/B
IC101 MC14053B
JC001
JC028
JC024
JC032
RC017
1k
TC015
BC858/B
CC036
22n
TC012
BC848/B
JC004
JC007
JC010
JC014
JC027
JC031
JC005
JC029
RC041
100k
TC011
RN1402
RC050
120k

20668760 (SECAM MODULE B1)

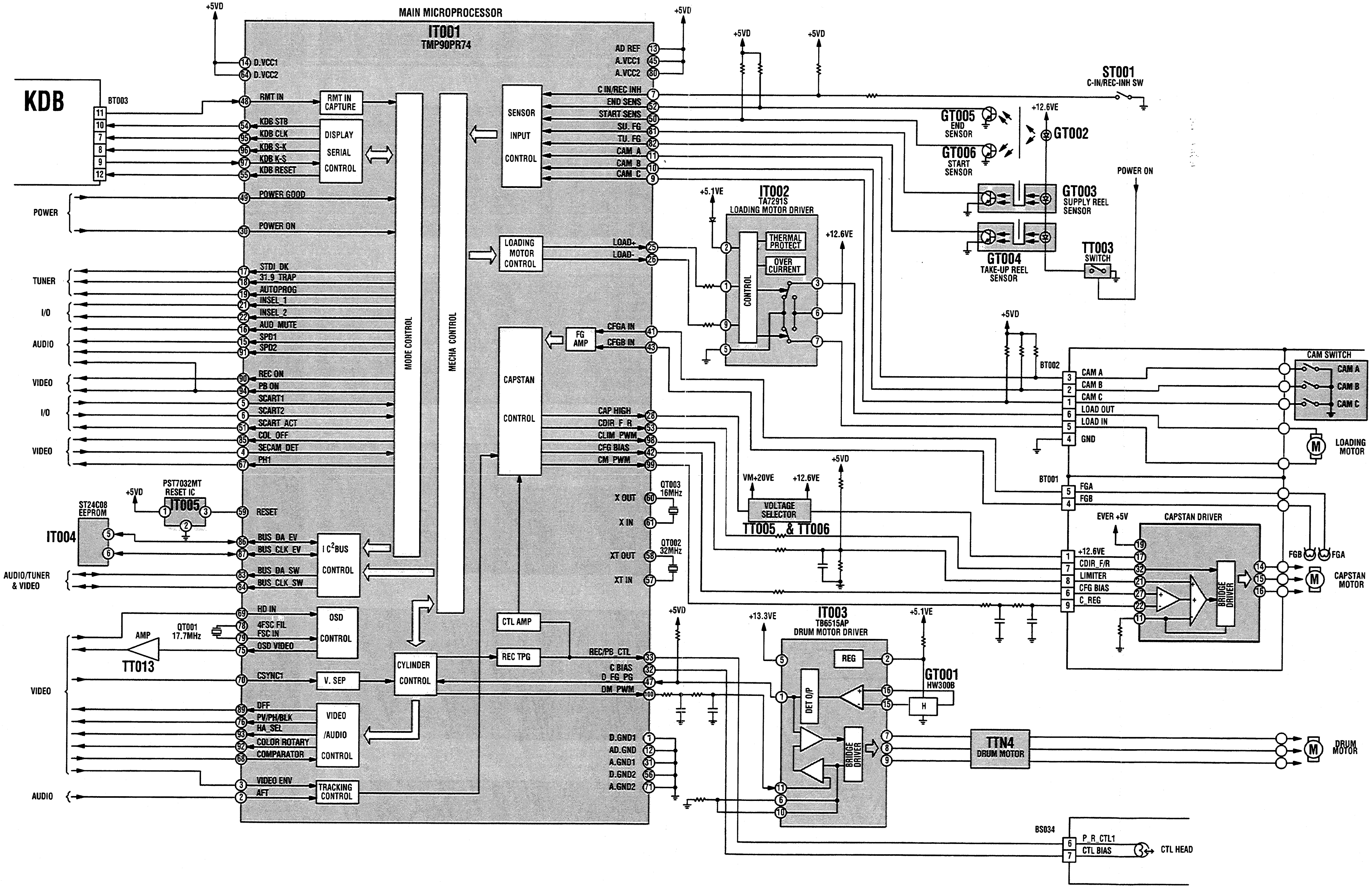
MEASUREMENTS SECAM SUB BOARD - MESURES PLATINE SECAM - MESSUNGEN SUB MODUL SECAM - MISURE PIASTRA SECAM - MEDIDAS PLATINA

SECAM		MODE		
LOC	PIN	EE	PLAY	REC.
IC100	1	0.7	0.7	4.3
	2	1.9	1.9	1.9
	3	3.8	3.8	3.8
	4	0.5	0.4	0.5
	5	0	0	0
	6	0	0	0
	7	0	0	0
	8	2.5	2.5	2.4
	9	2.5	2.5	2.4
	10	2.3	2.3	2.3
	11	2.5	2.5	2.5
	12	4.4	4.3	4.3
	13	2.5	2.5	2.5
	14	3.1	1.9	3
	15	2.7	1.9	2.7
	16	0	5	0
	17	2.5	2.5	2.5
	18	2.2	2.2	2.2
	19	2.3	2.3	2.3
	20	2.5	2.5	2.5
	21	2.5	2.5	2.5
	22	4.9	4.9	4.9
	23	3	2.3	2.9
	24	3	2.3	2.9
	25	2	2.1	2.4
	26	NC	NC	NC
	27	0.6	0.6	0.6
	28	0.3	0.3	0.3
IC101	1	1.9	1.9	1.8
	2	0	1.5	0
	3	0	0	0
	4	NC	NC	NC
	5	0	0	0
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	0	0	4.2
	10	0	0	4.2
	11	0	0	4.2
	12	2	0	1.9
	13	3.1	3.1	3.1
	14	1.9	0	3.1
	15	0	1.5	1.8
	16	5	5	5
TC001	E	0	0	0
	B	0	0	0
	C	0.7	0.7	4.3
TC002	E	2.5	2.5	2.4
	B	0	3.1	0
	C	2.5	2.5	2.4
TC003	E	1.9	1.9	1.8
	B	2.5	2.5	2.5
	C	5	5	5
TC005	E	2.5	2.5	2.5
	B	1.9	5	1.9
	C	2.5	2.5	2.5

SECAM		MODE		
LOC	PIN	EE	PLAY	REC.
TC006	E	0	0	0
	B	0	0.7	0.7
	C	0	0	0
TC007	E	0	1.5	0
	B	0	2.1	0
	C	5	5	5
TC009	E	2.6	0.7	3.7
	B	1.9	0	3.1
	C	0	0	0
TC011	E	0	0	0
	B	0	0	0
	C	0	0	0.6
TC012	E	0	0	0
	B	0	0	0.6
	C	2.3	2.3	0
TC014	E	0.7	0.7	4.3
	B	0	0	4.2
	C	0	0	0
TC015	E	3.1	1.7	3.1
	B	2.5	2.5	2.5
	C	0	0	0

MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANISMO / ASSERVIMENTI - SERVOMECANISMO / GESTIÒN

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES

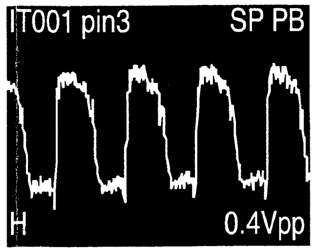

MAIN MICROPROCESSOR
IT001
TMP90PR74
+5VD
D.VCC1
D.VCC2
AD REF
A.VCC1
A.VCC2
KDB
BT003
RMT IN
RMT IN CAPTURE
KDB STB
KDB CLK
KDB S-K
KDB K-S
KDB RESET
DISPLAY SERIAL CONTROL
POWER
POWER GOOD
POWER ON
TUNER
I/O
AUDIO
VIDEO
STDI_DK
31.9_TRAP
AUTOPROG
INSEL_1
INSEL_2
AUD_MUTE
SPD1
SPD2
REC ON
PB ON
SCART1
SCART2
SCART_ACT
COL_OFF
SECAM_DET
PH1
MODE CONTROL
MECHA CONTROL
SENSOR INPUT CONTROL
C IN/REC INH
END SENS
START SENS
SU. FG
TU. FG
CAM A
CAM B
CAM C
LOADING MOTOR CONTROL
LOAD+
LOAD-
FG AMP
CFGA IN
CFGB IN
CAPSTAN CONTROL
CAP HIGH
CDIR_F_R
CLIM_PWM
CFG BIAS
CM_PWM
X OUT
X IN
XT OUT
XT IN
QT003 16MHz
QT002 32MHz
ST24C08 EEPROM
IT004
PST7032MT RESET IC
IT005
RESET
BUS_DA_EV
BUS_CLK_EV
BUS_DA_SW
BUS_CLK_SW
I C²BUS CONTROL
AUDIO/TUNER & VIDEO
HD IN
4FSC FIL
FSC IN
OSD VIDEO
OSD CONTROL
QT001 17.7MHz
AMP
TT013
CSYNC1
V. SEP
CYLINDER CONTROL
CTL AMP
REC TPG
REC/PB_CTL
C BIAS
D FG PG
DM_PWM
DFF
PV/PH/BLK
HA_SEL
COLOR ROTARY
COMPARATOR
VIDEO /AUDIO CONTROL
VIDEO ENV
AFT
TRACKING CONTROL
D.GND1
AD.GND
A.GND1
D.GND2
A.GND2
ST001
C-IN/REC-INH SW
GT005
END SENSOR
GT006
START SENSOR
+12.6VE
GT002
POWER ON
GT003
SUPPLY REEL SENSOR
GT004
TAKE-UP REEL SENSOR
TT003
SWITCH
+5.1VE
IT002
TA7291S
LOADING MOTOR DRIVER
CONTROL
THERMAL PROTECT
OVER CURRENT
BT002
CAM SWITCH
LOAD OUT
LOAD IN
GND
LOADING MOTOR
VM+20VE
VOLTAGE SELECTOR
TT005 & TT006
BT001
FGA
FGB
EVER +5V
CAPSTAN DRIVER
CDIR_F/R
LIMITER
CFG BIAS
C_REG
BRIDGE DRIVER
CAPSTAN MOTOR
+13.3VE
IT003
TB6515AP
DRUM MOTOR DRIVER
REG
DET O/P
GT001
HW300B
H
TTN4
DRUM MOTOR
BS034
P_R_CTL1
CTL BIAS
CTL HEAD

MEASUREMENTS MECHA DECK CONTROL / SERVO CONTROL - MESURES GESTION / ASSERVISSEMENTS - MESSUNGEN MECHANIKSTEUERUNG / SERVO - MISURE CONTROLLO MECCANISMO - MEDIDAS SERVOMECANISMO / GESTION

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
GT001	1	1.5	1.5	1.5
	2	0.8	0.8	0.8
	3	0	0	0
	4	0	0.7	0.7
GT002	A	3.6	3.6	3.6
	C	2.5	2.4	2.4
GT003	A	2.5	2.4	2.4
	K	1.3	1.2	1.2
	C	0	0	0
	E	2.8		
GT004	A	1.3	1.2	1.2
	K	0	0	0
	C	0	0	0
	E	0.2		
GT005	A	0	0	0
	C	0.7	5	5
GT006	A	0	0	0
	C	0.7	5	5
IT001	1	0	0	0
	2	2.2	2.1	2.1
	3	0.8	2.9	2.8
	4	0	0	0
	5	0	3.9	0
	6	0	0	0
	7	5.2	5.2	5.2
	8	5.2	5.2	5.2
	9	0	0	0
	10	0	5.2	5.2
	11	0	5.2	5.2
	12	0	0	0
	13	5.1	5.2	5.2
	14	5.1	5.1	5.1
	15	0	0	0
	16	0	0	0
	17	0	0	0
	18	5	5.1	5.1
	19	0	0	0
	20	0	5.1	0
	21	5.1	5.1	5.1
	22	5.1	5.1	5.1
	23	0	0	0
	24	0	0	0
	25	5.1	5.1	5.1
	26	5.1	5.1	5.1
	27	5.1	5.1	5.1
	28	0	0	0
	29	5.1	5.1	5.1
	30	4.9	4.8	4.8
	31	0	0	0
	32	2.6	2.6	2.6
	33	2.6	2.6	2.6
	34	2.6	2.6	2.6
	35	2.6	2.6	2.5
	36	2.6	2.5	2.6
	37	2.6	2.6	2.6
	38	2.6	3.3	2.6
	39	2.4	1.8	2.4

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
IT001	40	2.6	2.6	2.6
	41	2.6	2.6	2.6
	42	2.6	2.6	2.6
	43	2.6	2.6	2.6
	44	2.6	2.6	2.6
	45	5.2	5.2	5.2
	46	5.1	2.9	2.6
	47	0.1	1.4	1.3
	48	5.1	5.1	5.1
	49	5.3	5.3	5.2
	50	0.7	4.9	5.2
	51	0	5	0.2
	52	0.7	5	5.1
	53	5.1	0	0
	54	0	0	0
	55	5.1	5.1	5.1
	56	0	0	0
	57	2.1	2.2	2.1
	58	2.7	2.7	2.7
	59	5.1	5.1	5.1
	60	2.4	2.4	2.4
	61	2.2	2.4	2.2
	62	5	5	5
	63	0.2	0.4	0.4
	64	5.1	5.1	5.1
	65	0	0	0
	66	0.1	0.1	0.1
	67	0.1	0.1	0.1
	68	0.4	0	0
	69	0	3.8	3.8
	70	0	3.5	3.8
	71	0	0	0
	72	0	0	0
	73	0	0	0
	74	4.8	5.1	5.1
	75	0	1.4	1.4
	76	0	0.2	0.2
	77	NC	NC	NC
	78	0	2.4	2.4
	79	0	2.2	2.2
	80	0	5.2	5.2
	81	5.3		
	82	5.3		
	83	0.5	4.8	4.8
	84	0.5	4.8	4.8
	85	0	0	0
	86	4.6	5.2	5.2
	87	4.8	5.2	5.2
	88	0.1	0.1	0.1
	89	0	2.9	2.9
	90	0	0	0
	91	0	0	0
	92	0		
	93	0	0.1	0.1
	94	0	4.9	0
	95	0	0	0
	96	4.1	4	
	97	5.3	5.1	5.1
	98	2.1	2	2
	99	0	2.8	2.8
	100	0	2.8	2.8

SERVO		MODE		
LOC	PIN	EE	PLAY	REC.
IT002	1	4.8	4.8	4.8
	2	5.2	5.2	5.2
	3	0.6	0.6	0.6
	4	NC	NC	NC
	5	0	0	0
	6	14	12.9	13.3
	7	0.5	0.5	0.6
	8	14	12.9	13.3
	9	4.8	4.8	4.8
IT003	1	0	1.3	1.3
	2	1.5	1.5	1.5
	3	0	0	0
	4	0	0	0
	5	14.3	13.6	13.5
	6	0	0	0
	7	14.2	10.2	10.2
	8	14.2	10.2	10.2
	9	14.2	10.2	10.2
	10	0	0	0
	11	0	2.7	2.7
	12	0	0	0
	13	NC	NC	NC
	14	3.5	3.3	3.4
	15	0.7	0.7	0.7
	16	0.8	0.8	0.8
IT004	1	0	0	0
	2	0	0	0
	3	0	0	0
	4	0	0	0
	5	5.2	5.2	5.2
	6	5.2	5.2	5.2
	7	0	0	0
	8	5.2	5.2	5.2
IT005	1	5.1	5.1	5.1
	2	0	0	0
	3	5.1	5.1	5.1
TT003	E	0	0	0
	B	0.7	0	0
	C	0	0	0
TT006	E	0	0	0
	B	0	0	0
	C	18.8	18.8	18.7
TT013	E	2	2	2
	B	1.4	1.4	1.4
	C	0	0	0



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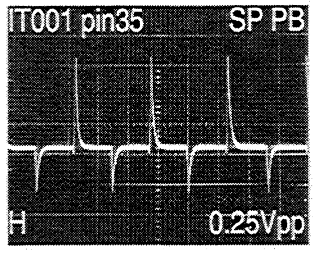

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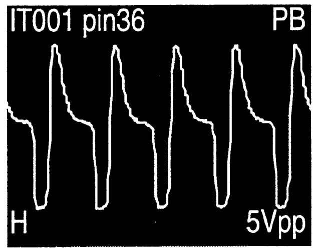

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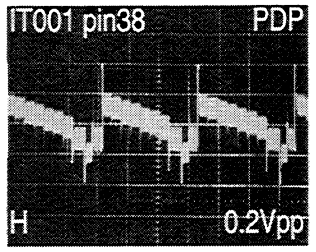

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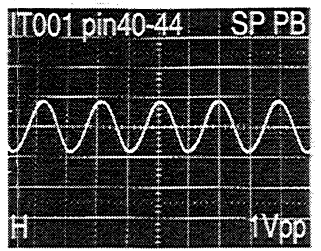

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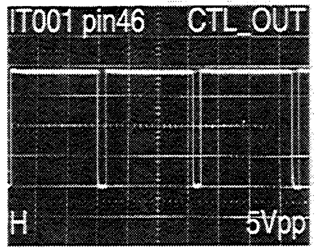

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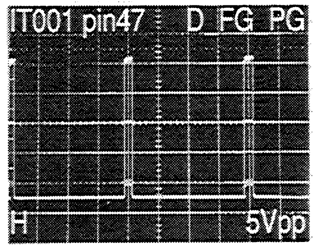

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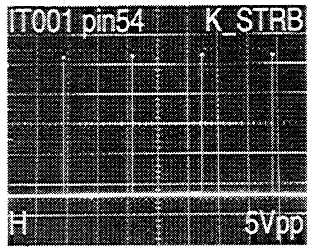

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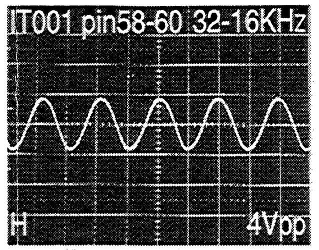

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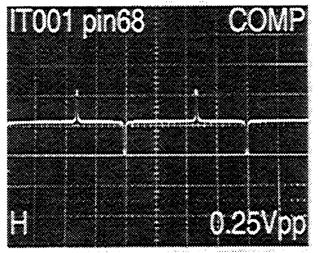

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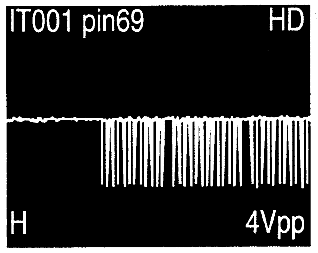

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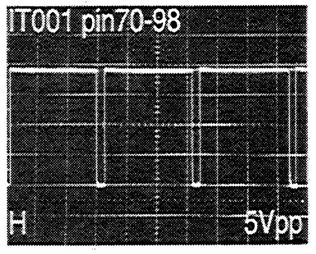

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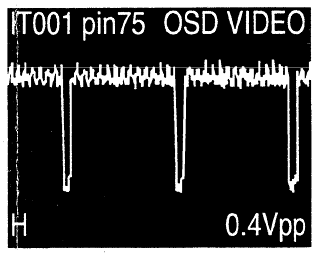

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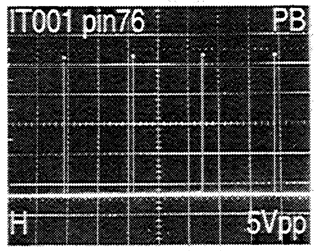

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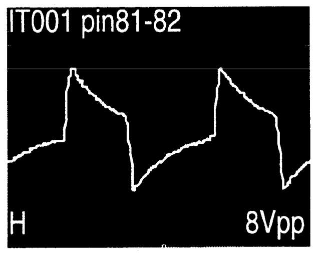

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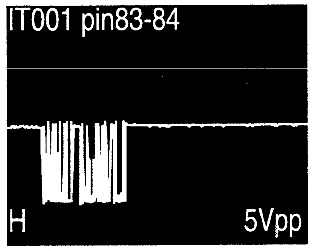

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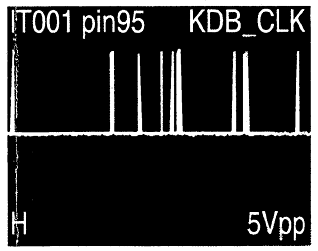

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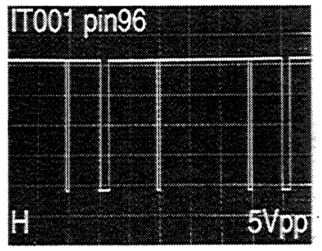

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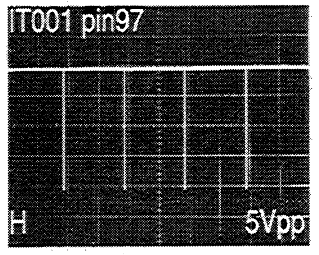

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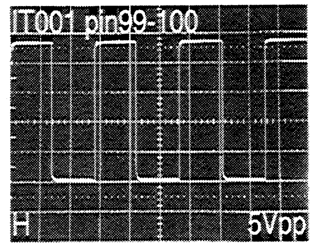

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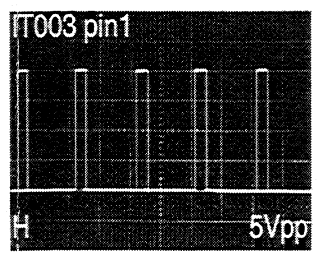

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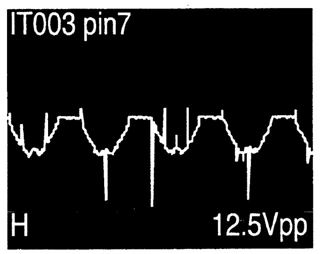

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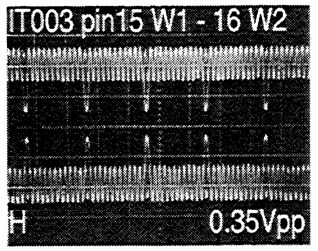

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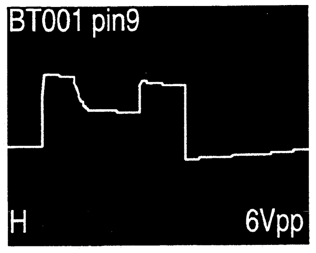
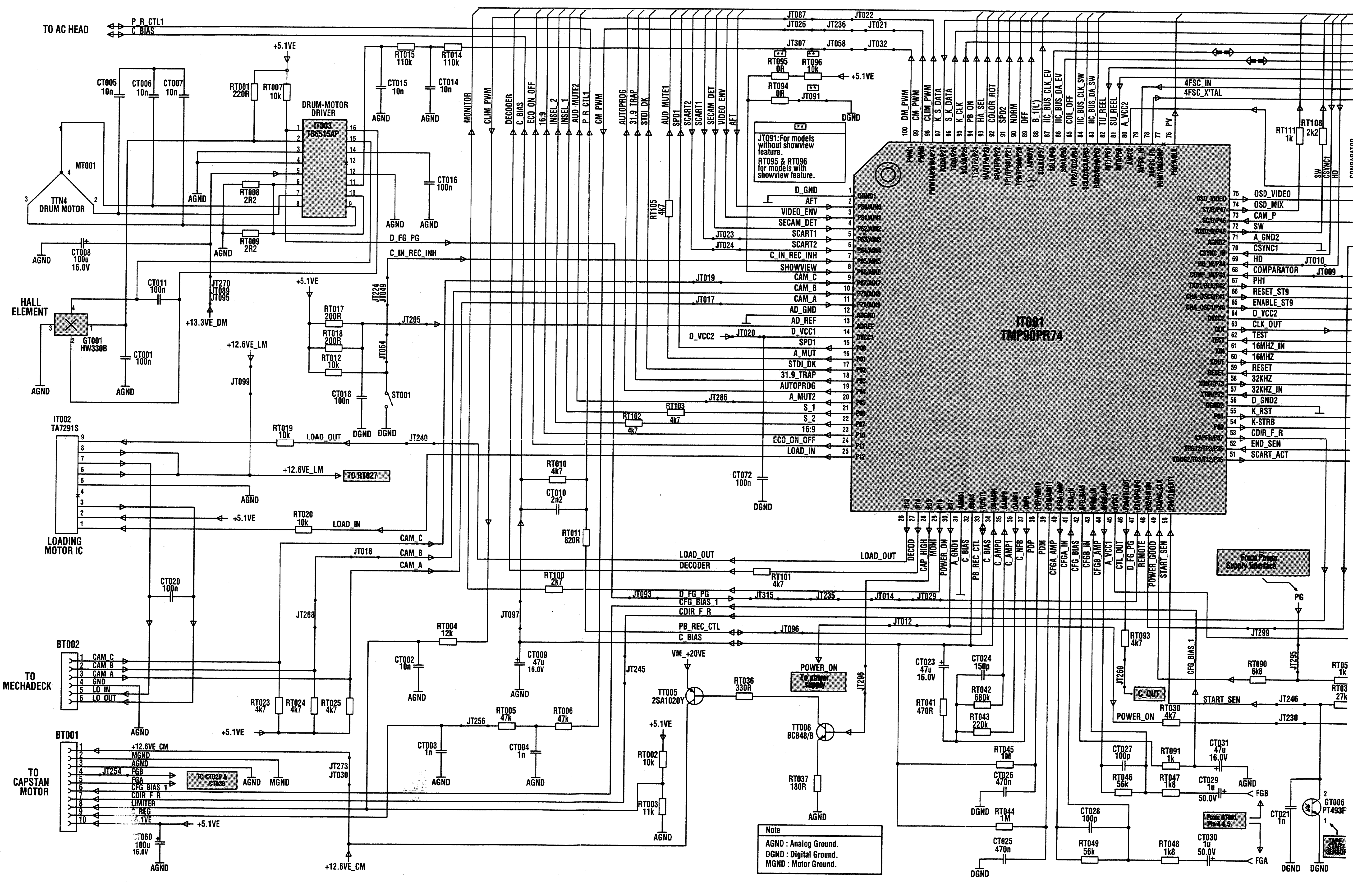


㉔

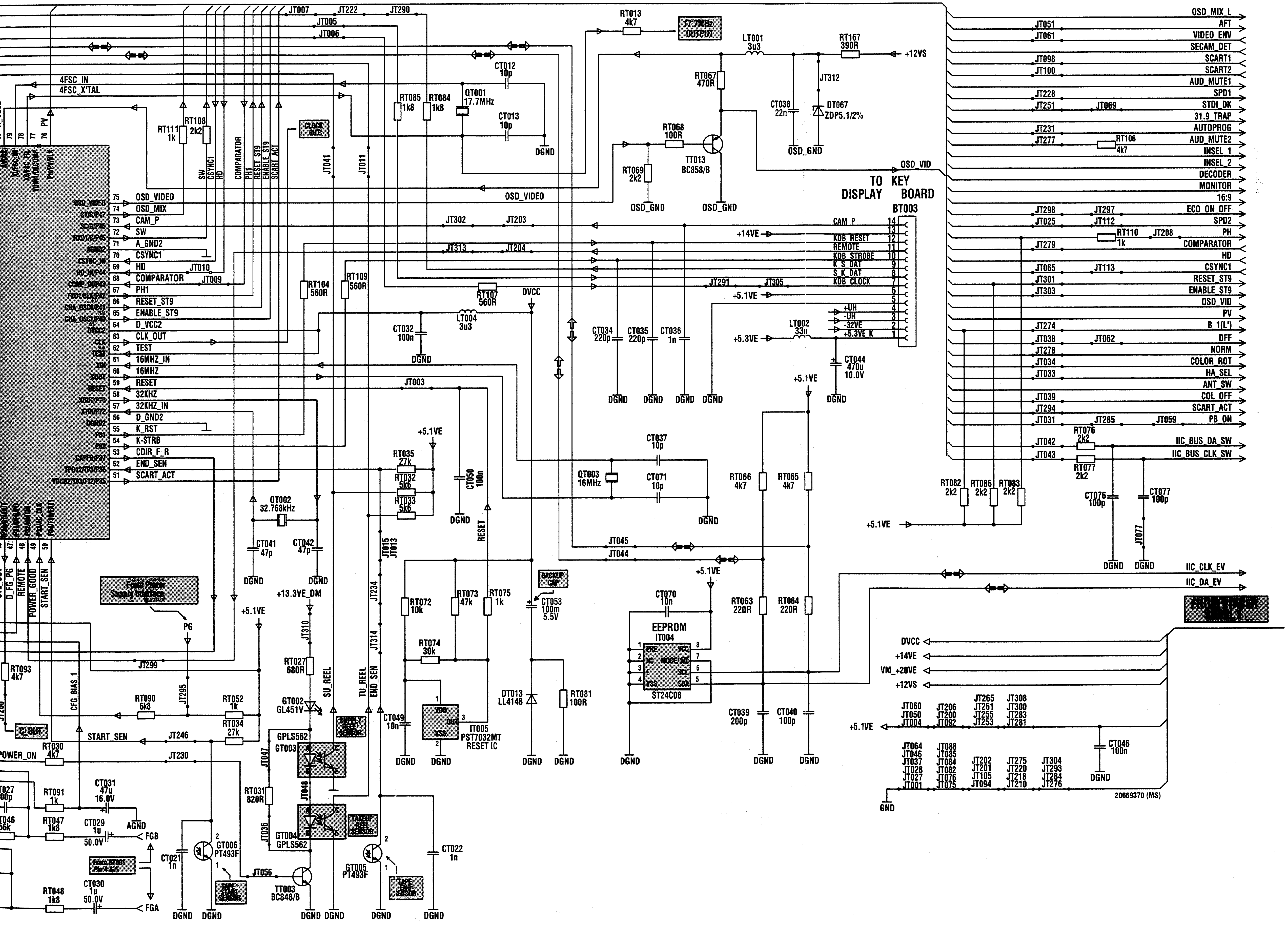
MECHA DECK CONTROL / SERVO CONTROL - GESTION / ASSERVISSEMENTS - MECHANIKSTEUERUNG / SERVO - CONTROLLO MECCANICA / SERVO - SERVOME

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


TO AC HEAD
P_R_CTL1
C_BIAS
+5.1VE
RT015 110k
RT014 110k
CT005 10n
CT006 10n
CT007 10n
RT001 220R
RT007 10k
DRUM-MOTOR DRIVER
IT003 TB6515AP
CT015 10n
CT014 10n
CT016 100n
MT001
TTN4 DRUM MOTOR
RT008 2R2
RT009 2R2
AGND
DGND
MGND
D_FG_PG
C_IN_REC_INH
CT008 100u 16.0V
CT011 100n
JT270 JT089 JT095
+13.3VE_DM
JT224 JT049
HALL ELEMENT
GT001 HW330B
CT001 100n
RT017 200R
RT018 200R
RT012 10k
JT205
JT054
CT018 100n
ST001
+12.6VE_LM
JT099
IT002 TA7291S
RT019 10k
LOAD_OUT
JT240
+12.6VE_LM
TO RT027
RT020 10k
LOAD_IN
LOADING MOTOR IC
RT010 4k7
CT010 2n2
RT011 820R
CAM_C
CAM_B
CAM_A
JT018
CT020 100n
JT268
JT097
BT002
TO MECHADECK
CAM_C
CAM_B
CAM_A
GND
LO_IN
LO_OUT
RT004 12k
CT002 10n
CT009 47u 16.0V
RT023 4k7
RT024 4k7
RT025 4k7
RT005 47k
RT006 47k
JT256
CT003 1n
CT004 1n
BT001
TO CAPSTAN MOTOR
+12.6VE_CM
MGND
AGND
JT254
FGB
FGA
CFG_BIAS_1
CDIR_F_R
LIMITER
REG
5.1VE
TO CT029 & CT030
JT273 JT030
CT060 100u 16.0V
+12.6VE_CM
MONITOR
CLIM_PWM
DECODER
C_BIAS
ECO_ON_OFF
16:9
INSEL_2
INSEL_1
AUD_MUTE2
P_R_CTL1
CM_PWM
AUTOPROG
31.9_TRAP
STDI_DK
AUD_MUTE1
SPD1
SCART2
SCART1
SECAM_DET
VIDEO_ENV
AFT
JT087
JT022
JT026
JT236
JT021
JT307
JT058
JT032
RT095 0R
RT096 10k
RT094 0R
JT091
JT091:For models without showview feature. RT095 & RT096 for models with showview feature.
RT105 4k7
JT023
JT024
JT019
JT017
D_VCC2
JT020
JT286
RT102 4k7
RT103 4k7
CT072 100n
IT091 TMP90PR74
D_GND
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
C_IN_REC_INH
SHOWVIEW
CAM_C
CAM_B
CAM_A
AD_GND
AD_REF
D_VCC1
SPD1
A_MUT
STDI_DK
31.9_TRAP
AUTOPROG
A_MUT2
S_1
S_2
16:9
ECO_ON_OFF
LOAD_IN
DM_PWM
CM_PWM
CLIM_PWM
K_S_DATA
S_K_DATA
K_CLK
PB_ON
HA_SEL
COLOR_ROT
SPD2
NORM
DFF
B_1(L')
IIC_BUS_CLK_EV
IIC_BUS_DA_EV
COL_OFF
IIC_BUS_CLK_SW
IIC_BUS_DA_SW
TU_REEL
SU_REEL
A_VCC2
PV
4FSC_IN
4FSC_X'TAL
RT111 1k
RT108 2k2
OSD_VIDEO
OSD_MIX
CAM_P
SW
A_GND2
CSYNC1
HD
COMPARATOR
JT010
JT009
PH1
RESET_ST9
ENABLE_ST9
D_VCC2
CLK_OUT
TEST
16MHZ_IN
16MHZ
RESET
32KHZ
32KHZ_IN
D_GND2
K_RST
K-STRB
CDIR_F_R
END_SEN
SCART_ACT
DECOD
CAP_HIGH
MONI
POWER_ON
A_GND1
C_BIAS
PB_REC_CTL
C_BIAS
C_AMPO
C_AMP1
C_NFB
PDP
PDM
CFGA_AMP
CFGA_IN
CFG_BIAS
CFGB_IN
CFGB_AMP
A_VCC1
CTL_OUT
D_FG_PG
REMOTE
POWER_GOOD
START_SEN
LOAD_OUT
DECODER
RT101 4k7
RT100 2k7
JT093
D_FG_PG
CFG_BIAS_1
CDIR_F_R
PB_REC_CTL
C_BIAS
JT315
JT235
JT014
JT029
JT012
JT096
VM_+20VE
TT005 2SA1020Y
RT036 330R
POWER_ON
To power supply
JT245
JT296
TT006 BC848/B
+5.1VE
RT002 10k
RT003 11k
RT037 180R
From Power Supply Interface
PG
CT023 47u 16.0V
CT024 150p
RT042 680k
RT041 470R
RT043 220k
RT093 4k7
JT260
C_OUT
CFG_BIAS_1
JT295
RT090 6k8
JT299
START_SEN
JT246
POWER_ON
RT030 4k7
JT230
RT045 1M
CT026 470n
RT044 1M
CT025 470n
CT027 100p
RT091 1k
CT031 47u 16.0V
RT046 56k
RT047 1k8
CT029 1u 50.0V
FGB
CT028 100p
RT049 56k
RT048 1k8
CT030 1u 50.0V
FGA
From BT001 Pin 4 & 5
CT021 1n
GT006 PT493F

Note
AGND : Analog Ground.
DGND : Digital Ground.
MGND : Motor Ground.

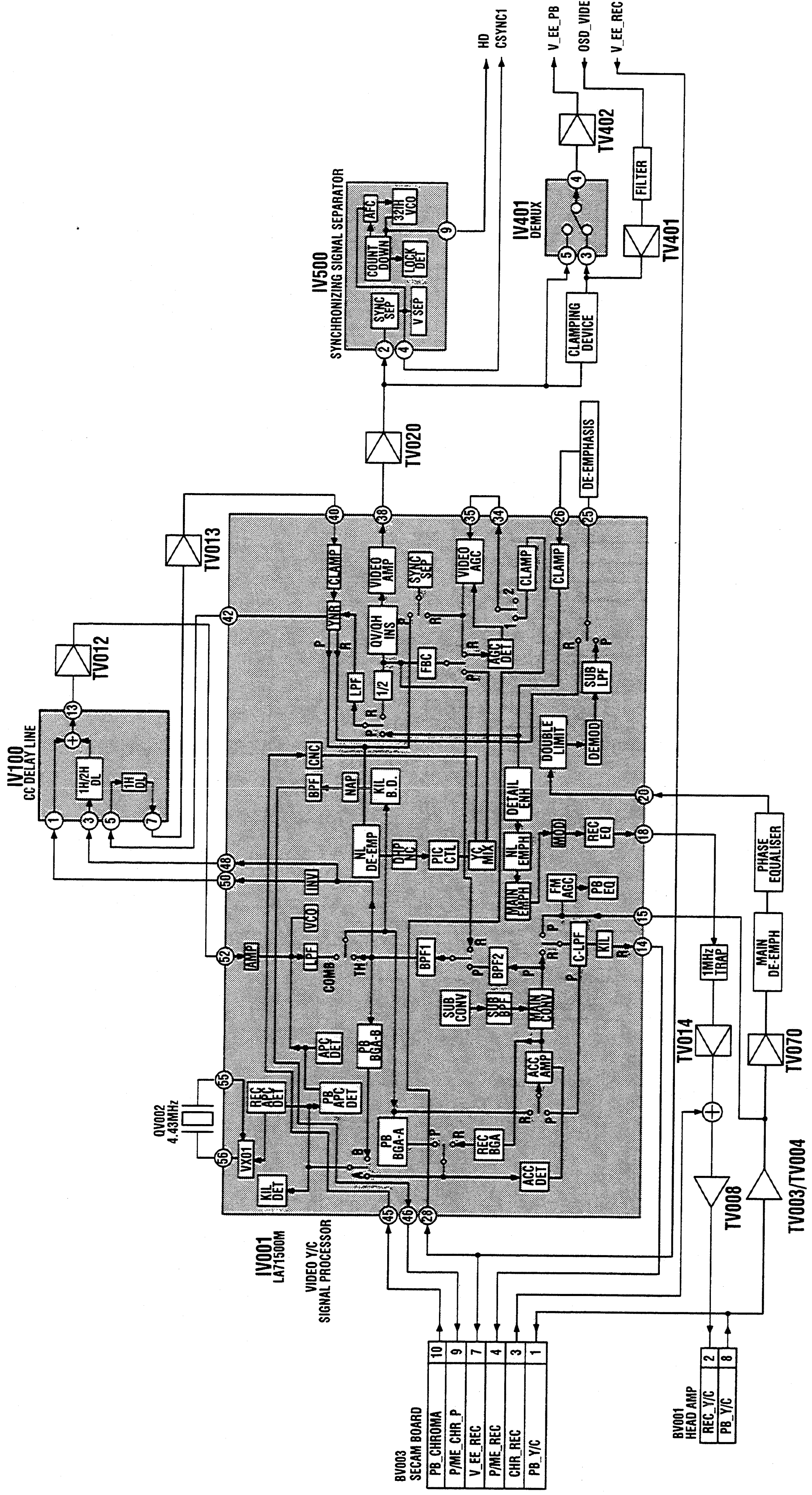
NICA / SERVO - SERVOMECANISMO / GESTIÒN



4FSC_IN
4FSC_X'TAL
RT111 1k
RT108 2k2
CLOCK OUT
JT007
JT222
JT290
JT005
JT006
CT012 10p
RT085 1k8
RT084 1k8
QT001 17.7MHz
CT013 10p
DGND
JT041
JT011
RT013 4k7
17.7MHz OUTPUT
LT001 3u3
RT167 390R
+12VS
RT067 470R
JT312
CT038 22n
DT067 ZDP5.1/2%
RT068 100R
TT013 BC858/B
RT069 2k2
OSD_GND
OSD_VID
TO KEY DISPLAY BOARD
BT003
CAM_P
+14VE
KDB_RESET
REMOTE
KDB_STROBE
K_S_DAT
S_K_DAT
KDB_CLOCK
+5.1VE
+UH
-UH
-32VE
+5.3VE_K
+5.3VE
LT002 33u
CT044 470u 10.0V
OSD_VIDEO
OSD_MIX
CAM_P
SW
A_GND2
CSYNC1
HD
COMPARATOR
PH1
RESET_ST9
ENABLE_ST9
D_VCC2
CLK_OUT
TEST
16MHZ_IN
16MHZ
RESET
32KHZ
32KHZ_IN
D_GND2
K_RST
K-STRB
CDIR_F_R
END_SEN
SCART_ACT
JT010
JT009
JT302
JT203
JT313
JT204
RT104 560R
RT109 560R
RT107 560R
DVCC
LT004 3u3
CT032 100n
JT291
JT305
CT034 220p
CT035 220p
CT036 1n
JT003
+5.1VE
RT035 27k
RT032 5k6
RT033 5k6
CT050 100n
RESET
CT037 10p
QT003 16MHz
CT071 10p
RT066 4k7
RT065 4k7
QT002 32.768kHz
CT041 47p
CT042 47p
JT015
JT013
JT045
JT044
From Power Supply Interface
PG
+13.3VE_DM
JT234
BACKUP CAP
RT072 10k
RT073 47k
RT075 1k
CT053 100m 5.5V
RT074 30k
RT063 220R
RT064 220R
CT070 10n
EEPROM
IT004
PRE
NC
E
VSS
VCC
MODE/WC
SCL
SDA
ST24C08
JT310
RT027 680R
SU_REEL
JT314
TU_REEL
END_SEN
GT002 GL451V
SUPPLY REEL SENSOR
GPLS562
GT003
CT049 10n
VDD
OUT
VSS
IT005 PST7032MT RESET IC
DT013 LL4148
RT081 100R
CT039 200p
CT040 100p
RT093 4k7
JT299
CFG_BIAS_1
RT090 6k8
JT295
RT052 1k
RT034 27k
C_OUT
RT030 4k7
START_SEN
JT246
POWER_ON
JT230
JT047
RT031 820R
JT048
JT036
GT004 GPLS562
TAKEUP REEL SENSOR
RT091 1k
CT031 47u 16.0V
AGND
RT047 1k8
CT029 1u 50.0V
FGB
From BT001 Pin:4 &5
RT048 1k8
CT030 1u 50.0V
FGA
CT021 1n
GT006 PT493F
TAPE START SENSOR
JT056
TT003 BC848/B
GT005 PT493F
TAPE END SENSOR
CT022 1n
D_FG_PG
REMOTE
POWER_GOOD
START_SEN
OSD_MIX_L
AFT
VIDEO_ENV
SECAM_DET
SCART1
SCART2
AUD_MUTE1
SPD1
STDI_DK
31.9_TRAP
AUTOPROG
AUD_MUTE2
INSEL_1
INSEL_2
DECODER
MONITOR
16:9
ECO_ON_OFF
SPD2
PH
COMPARATOR
HD
CSYNC1
RESET_ST9
ENABLE_ST9
OSD_VID
PV
B_1(L')
DFF
NORM
COLOR_ROT
HA_SEL
ANT_SW
COL_OFF
SCART_ACT
PB_ON
IIC_BUS_DA_SW
IIC_BUS_CLK_SW
JT051
JT061
JT098
JT100
JT228
JT251
JT069
JT231
JT277
RT106 4k7
JT298
JT297
JT025
JT112
RT110 1k
JT208
JT279
JT065
JT113
JT301
JT303
JT274
JT038
JT062
JT278
JT034
JT033
JT039
JT294
JT031
JT285
JT059
JT042
RT076 2k2
JT043
RT077 2k2
RT082 2k2
RT086 2k2
RT083 2k2
CT076 100p
CT077 100p
JT077
IIC_CLK_EV
IIC_DA_EV
FROM POWER SUPPLY
DVCC
+14VE
VM_+20VE
+12VS
JT060 JT050 JT004
JT206 JT200 JT092
JT265 JT261 JT255 JT253
JT308 JT300 JT283 JT281
JT064 JT046 JT037 JT028 JT027 JT001
JT088 JT085 JT084 JT082 JT076 JT075
JT202 JT201 JT105 JT094
JT275 JT220 JT218 JT210
JT304 JT293 JT284 JT276
CT046 100n
GND
20669370 (MS)

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES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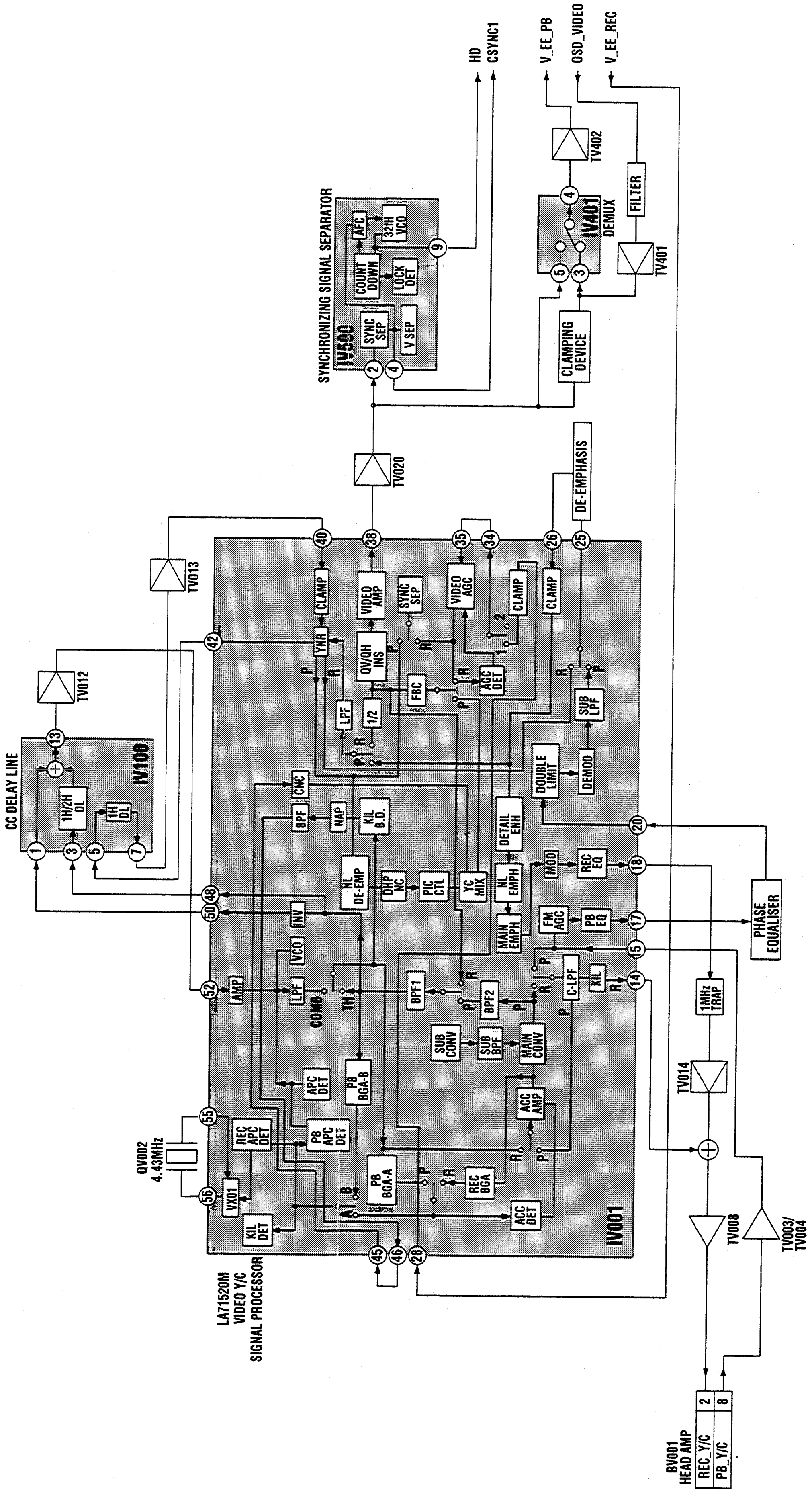
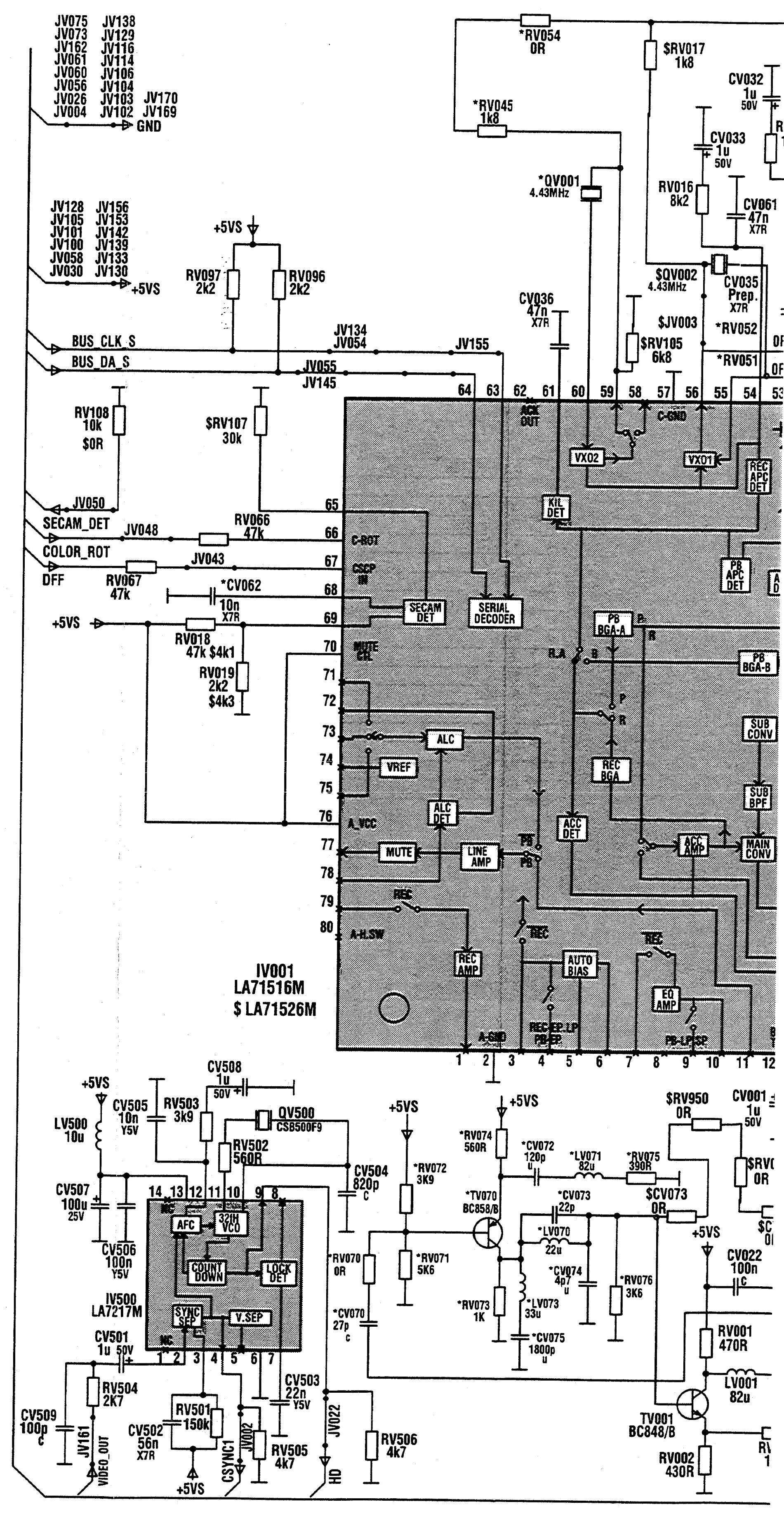
CSYNC1
V_EE_PB
OSD_VIDEO
V_EE_REC
TV402
FILTER
TV401
IV401
DEMUX
CLAMPING DEVICE
IV500
SYNCHRONIZING SIGNAL SEPARATOR
AFC
32H VCO
COUNT DOWN
LOCK DET
SYNC SEP
V SEP
TV020
DE-EMPHASIS
TV013
TV012
IV100
CC DELAY LINE
1H/2H DL
1H DL
CLAMP
VIDEO AMP
SYNC SEP
VIDEO AGC
YNR
QV/QH INS
FBC
AGC DET
SUB LPF
DOUBLE LIMIT
DEMOD
LPF
1/2
BPF
CNC
NAP
KIL B.D.
DETAIL ENH
N DE-EMP
DHP NC
PIC CTL
YC MIX
N EMPH
MOD
REC EQ
INV
MAIN EMPH
FM AGC
PB EQ
VCO
AMP
COMB
TH
BPF1
BPF2
C-LPF
KIL
SUB CONV
SUB BPF
MAIN CONV
APC DET
PB BGA-B
ACC AMP
REC APC DET
PB APC DET
PB BGA-A
REC BGA
ACC DET
VXO1
KIL DET
PHASE EQUALISER
MAIN DE-EMPH
1MHz TRAP
TV014
TV070
TV008
TV003/TV004
QV002
4.43MHz
IV001
LA71500M
VIDEO Y/C SIGNAL PROCESSOR
BV003
SECAM BOARD
PB_CHROMA
P/ME_CHR_P
V_EE_REC
P/ME_REC
CHR_REC
PB_Y/C
BV001
HEAD AMP
REC_Y/C
PB_Y/C

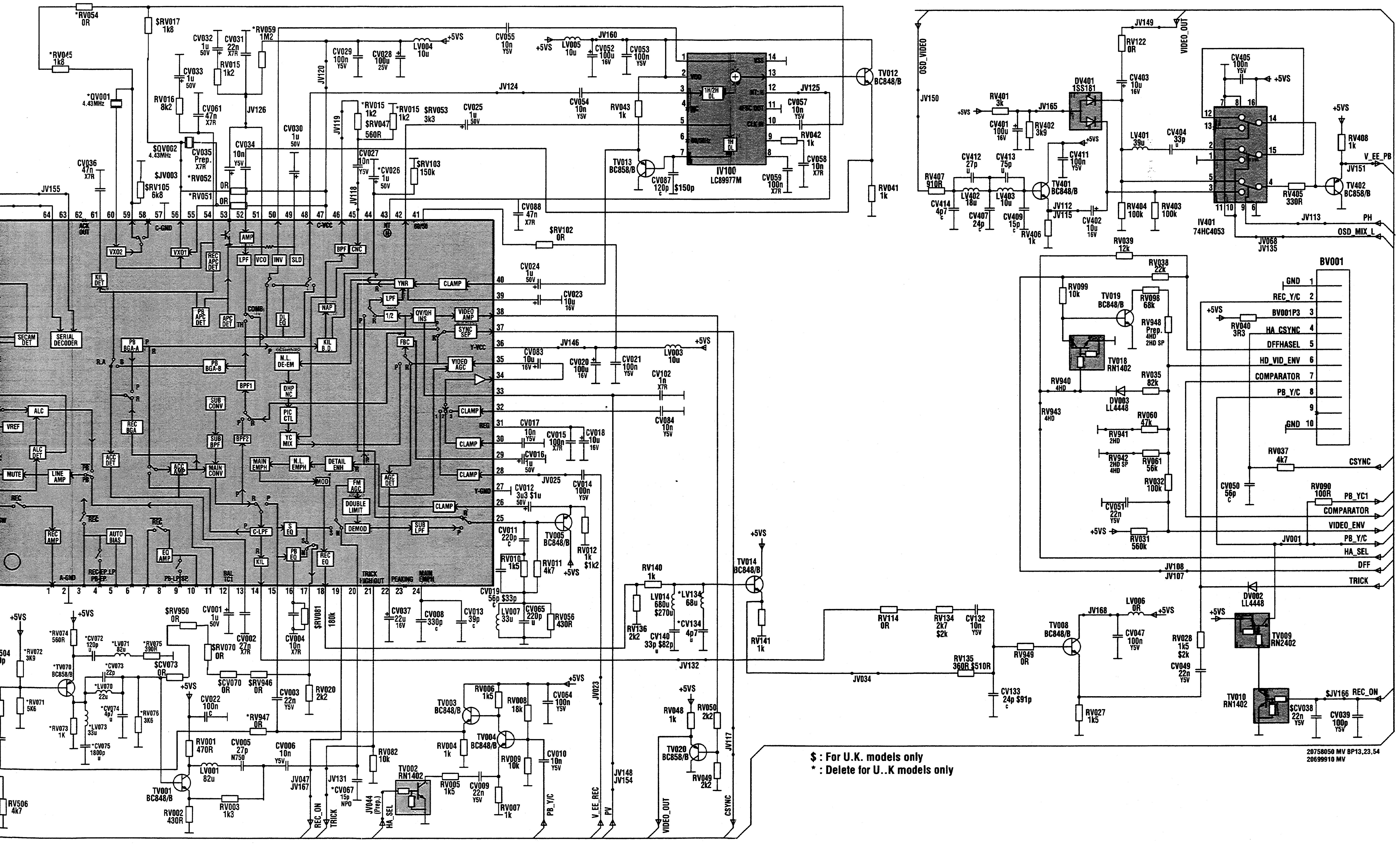

HD
CSYNC1
V_EE_PB
OSD_VIDEO
V_EE_REC
TV402
IV401
DEMUX
FILTER
TV401
CLAMPING DEVICE
SYNCHRONIZING SIGNAL SEPARATOR
IV500
AFC
32H VCO
COUNT DOWN
LOCK DET
SYNC SEP
V SEP
TV020
DE-EMPHASIS
TV013
TV012
CC DELAY LINE
IV100
1H/2H DL
1H DL
CLAMP
VIDEO AMP
SYNC SEP
VIDEO AGC
YNR
QV/QH INS
FBC
AGC DET
SUB LPF
DOUBLE LIMIT
DEMOD
LPF
1/2
BPF
CNC
NAP
KIL B.D.
DETAIL ENH
N DE-EMP
DHP NC
PIC CTL
YC MIX
N EMPH
MOD
REC EQ
INV
MAIN EMPH
FM AGC
PB EQ
VCO
AMP
COMB
TH
BPF1
BPF2
C-LPF
KIL
SUB CONV
SUB BPF
MAIN CONV
APC DET
PB BGA-B
ACC AMP
REC APC DET
PB APC DET
PB BGA-A
REC BGA
ACC DET
VXO1
KIL DET
IV001
PHASE EQUALISER
1MHz TRAP
TV014
TV008
TV003/TV004
QV002
4.43MHz
LA71520M
VIDEO Y/C SIGNAL PROCESSOR
BV001
HEAD AMP
REC_Y/C
PB_Y/C

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIP


JV075 JV138
JV073 JV129
JV162 JV116
JV061 JV114
JV060 JV106
JV056 JV104
JV026 JV103 JV170
JV004 JV102 JV169
GND
JV128 JV156
JV105 JV153
JV101 JV142
JV100 JV139
JV058 JV133
JV030 JV130
+5VS
RV097 2k2
RV096 2k2
BUS_CLK_S
BUS_DA_S
JV134
JV054
JV155
JV055
JV145
RV108 10k $0R
$RV107 30k
JV050
SECAM_DET
JV048
RV066 47k
COLOR_ROT
JV043
DFF
RV067 47k
*CV062 10n X7R
RV018 47k $4k1
RV019 2k2 $4k3
*RV054 0R
*RV045 1k8
$RV017 1k8
CV032 1u 50V
CV033 1u 50V
*QV001 4.43MHz
RV016 8k2
CV061 47n X7R
$QV002 4.43MHz
CV035 Prep. X7R
CV036 47n X7R
$JV003
*RV052
$RV105 6k8
*RV051
VXO2
VXO1
KIL DET
REC APC DET
PB APC DET
SECAM DET
SERIAL DECODER
PB BGA-A
PB BGA-B
SUB CONV
SUB BPF
ALC
VREF
ALC DET
REC BGA
ACC DET
ACC AMP
MAIN CONV
MUTE
LINE AMP
REC AMP
AUTO BIAS
EQ AMP
IV001
LA71516M
$ LA71526M
CV508 1u 50V
QV500 CSB500F9
CV505 10n Y5V
RV503 3k9
LV500 10u
RV502 560R
CV504 820p C
CV507 100u 25V
CV506 100n Y5V
IV500
LA7217M
AFC
32H VCO
COUNT DOWN
LOCK DET
SYNC SEP
V.SEP
CV501 1u 50V
RV504 2K7
CV509 100p C
JV161
VIDEO_OUT
CV502 56n X7R
RV501 150k
CSYNC1
JV002
RV505 4k7
CV503 22n Y5V
JV022
HD
RV506 4k7
*RV070 0R
*CV070 27p C
*RV072 3K9
*RV071 5K6
*RV074 560R
*TV070 BC858/B
*CV072 120p
*LV071 82u
*RV075 390R
*CV073 22p
*LV070 22u
*CV074 4p7
*RV076 3K6
*RV073 1K
*LV073 33u
*CV075 1800p
$RV950 0R
CV001 1u 50V
$CV073 0R
CV022 100n
RV001 470R
LV001 82u
TV001 BC848/B
RV002 430R

ENTO VIDEO

DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


IV100
LC89977M
1H/2H DL
1H DL
TV012 BC848/B
TV013 BC858/B
TV001 BC848/B
TV003 BC848/B
TV004 BC848/B
TV005 BC848/B
TV008 BC848/B
TV014 BC848/B
TV019 BC848/B
TV020 BC858/B
TV070 BC858/B
TV401 BC848/B
TV402 BC858/B
TV002 RN1402
TV009 RN2402
TV010 RN1402
TV018 RN1402
IV401
74HC4053
DV401 1SS181
DV002 LL4448
DV003 LL4448
BV001
GND
REC_Y/C
BV001P3
HA_SYNC
DFFHASEL
HD_VID_ENV
COMPARATOR
PB_Y/C
CSYNC
PB_YC1
VIDEO_ENV
HA_SEL
DFF
TRICK
REC_ON
V_EE_PB
PH
OSD_MIX_L
OSD_VIDEO
VIDEO_OUT
REC_ON
HA_SEL
PB_Y/C
V_EE_REC
PV
*QV001 4.43MHz
$QV002 4.43MHz
+5VS
SECAM DET
SERIAL DECODER
ALC
VREF
ALC DET
MUTE
LINE AMP
REC AMP
AUTO BIAS
EQ AMP
ACC DET
ACC AMP
MAIN CONV
SUB CONV
SUB BPF
REC BGA
PB BGA-A
PB BGA-B
KIL DET
VXO2
VXO1
REC APC DET
PB APC DET
APC DET
AMP
LPF
VCO
INV
SLD
BPF1
BPF2
N.L. DE-EM
DHP NC
PIC CTL
YC MIX
MAIN EMPH
N.L. EMPH
DETAIL ENH
MOD
FM AGC
DOUBLE LIMIT
DEMOD
C-LPF
S EQ
PB EQ
REC EQ
KIL
DL EQ
NAP
KIL B.D.
YNR
CLAMP
QV/QH INS
VIDEO AMP
SYNC SEP
VIDEO AGC
FBC
SUB LPF
AGC DET
BPF
CNC

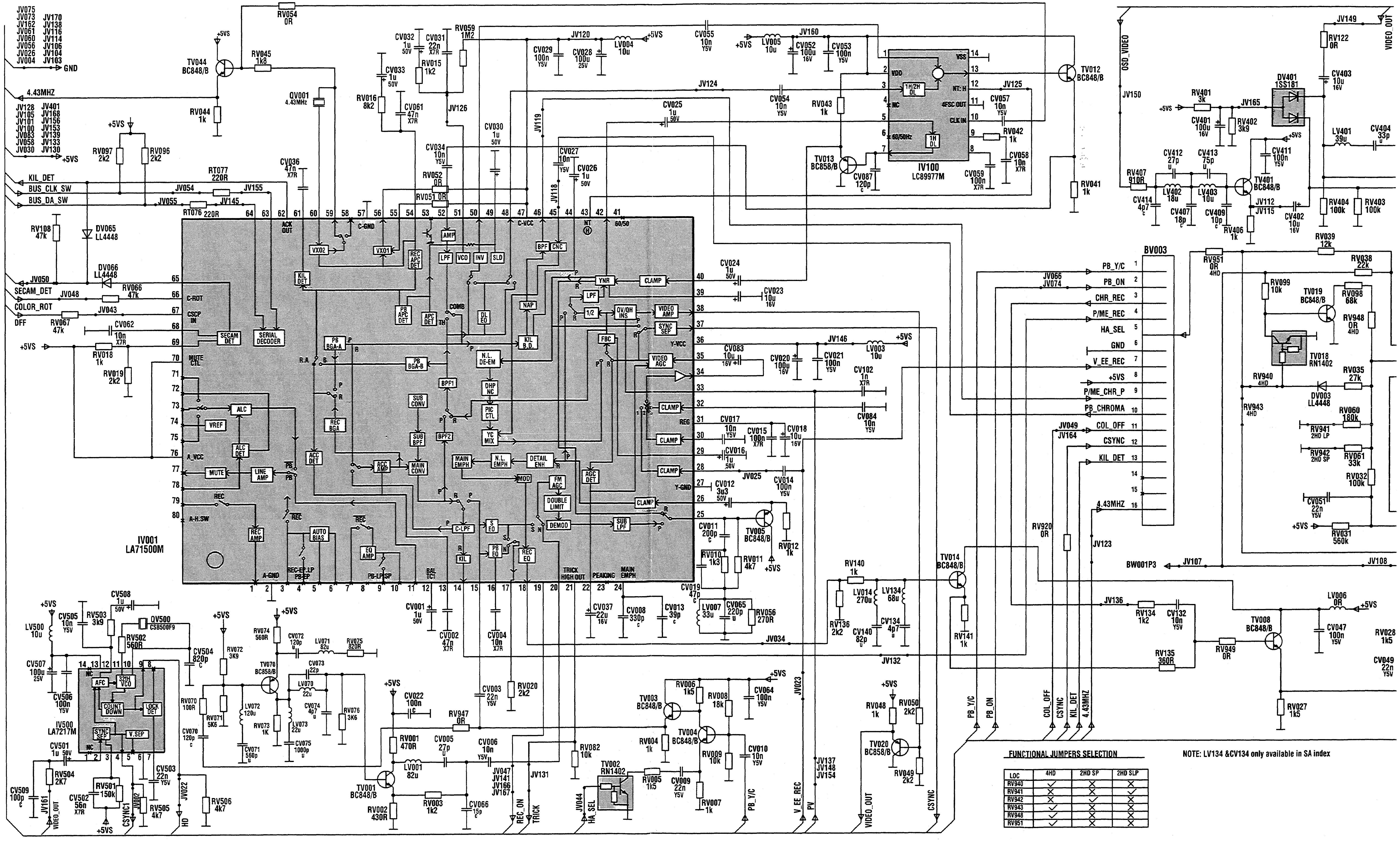
$: For U.K. models only

*** : Delete for U..K models only**

20758050 MV BP13,23,54
20699910 MV

VIDEO SIGNAL PROCESSING - TRAITEMENT LUMINANCE / CHROMINANCE - VIDEO SIGNALVERARBEITUNG - ELABORAZIONE VIDEO - TRATAMIENTO VIDEO

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA

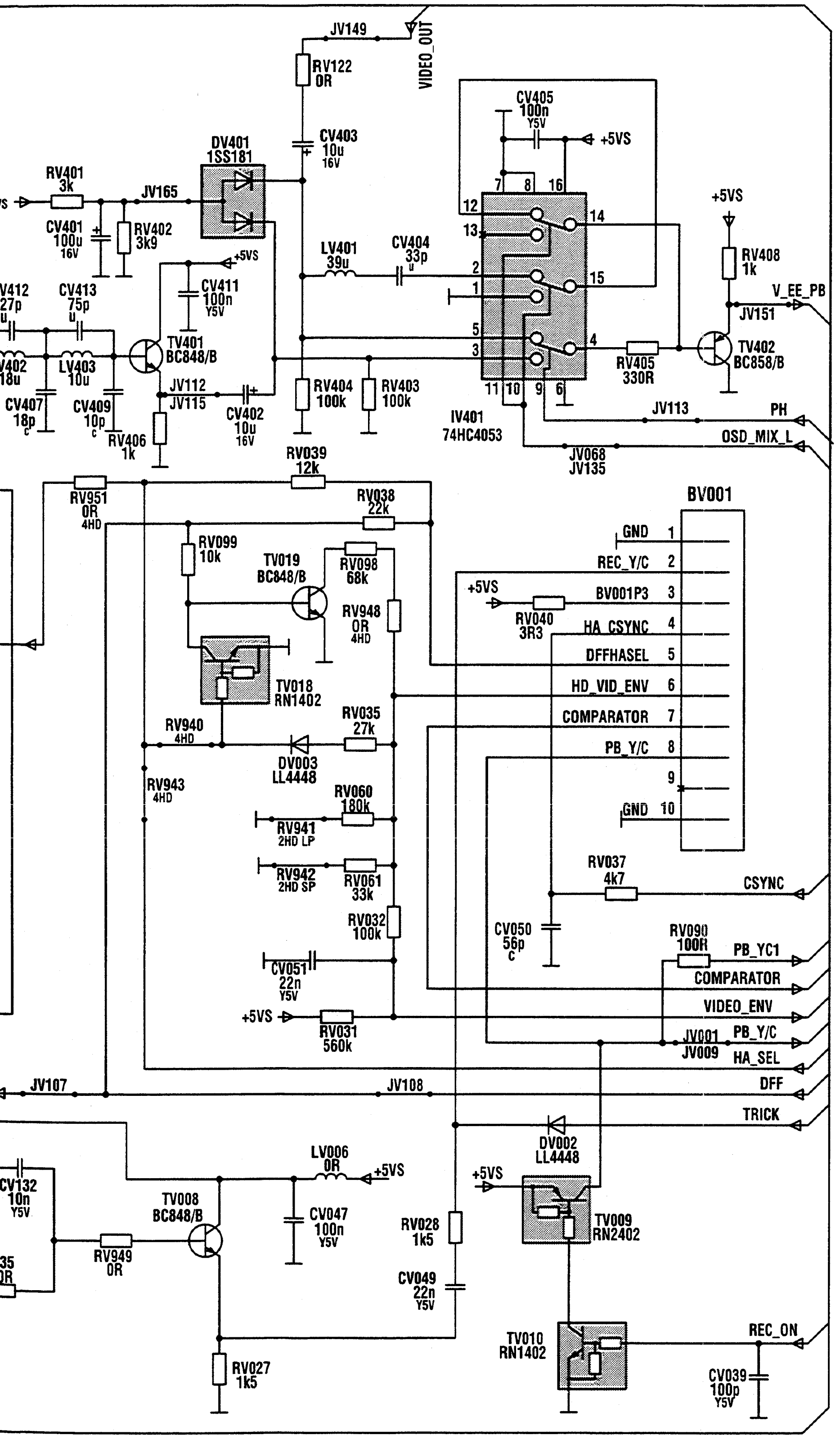

IV001
LA71500M
IV100
LC89977M
IV500
LA7217M
BV003
BW001P3
PB_Y/C
PB_ON
CHR_REC
P/ME_REC
HA_SEL
GND
V_EE_REC
+5VS
P/ME_CHR_P
PB_CHROMA
COL_OFF
CSYNC
KIL_DET
4.43MHZ
GND
4.43MHZ
KIL_DET
BUS_CLK_SW
BUS_DA_SW
SECAM_DET
COLOR_ROT
DFF
OSD_VIDEO
VIDEO_OUT
REC_ON
TRICK
HA_SEL
PB_Y/C
V_EE_REC
PV
VIDEO_OUT
CSYNC
HD
CSYNC1
TV044 BC848/B
TV012 BC848/B
TV013 BC858/B
TV401 BC848/B
TV019 BC848/B
TV018 RN1402
TV005 BC848/B
TV014 BC848/B
TV008 BC848/B
TV003 BC848/B
TV004 BC848/B
TV020 BC858/B
TV002 RN1402
TV001 BC848/B
TV070 BC858/B
DV401 1SS181
DV065 LL4448
DV066 LL4448
DV003 LL4448
QV001 4.43MHz
QV500 CSB500F9
YNR
CLAMP
VIDEO AMP
SYNC SEP
VIDEO AGC
SECAM DET
SERIAL DECODER
KIL DET
ALC
VREF
MUTE
LINE AMP
REC AMP
AUTO BIAS
EQ AMP
MAIN CONV
SUB CONV
MAIN EMPH
N.L. EMPH
DETAIL ENH
FM AGC
DOUBLE LIMIT
DEMOD
SUB LPF
C-LPF
AFC
32fH VCO
COUNT DOWN
LOCK DET
SYNC SEP
V.SEP

FUNCTIONAL JUMPERS SELECTION

LOC	4HD	2HD SP	2HD SLP
RV940	✓	✗	✗
RV941	✗	✗	✓
RV942	✗	✓	✗
RV943	✓	✗	✗
RV948	✓	✗	✗
RV951	✓	✗	✗

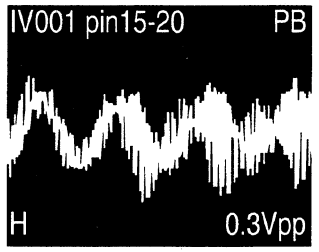
NOTE: LV134 &CV134 only available in SA index

ATAMIENTO VIDEO


JV149
VIDEO_OUT
RV122
0R
CV403
10u
16V
CV405
100n
Y5V
+5VS
DV401
1SS181
RV401
3k
JV165
CV401
100u
16V
RV402
3k9
+5VS
CV411
100n
Y5V
LV401
39u
CV404
33p
V412
27p
CV413
75p
402
18u
LV403
10u
TV401
BC848/B
JV112
JV115
CV402
10u
16V
CV407
18p
CV409
10p
RV406
1k
RV404
100k
RV403
100k
IV401
74HC4053
7
8
16
12
13
14
2
1
15
5
3
4
11
10
9
6
RV405
330R
+5VS
RV408
1k
V_EE_PB
JV151
TV402
BC858/B
JV113
PH
OSD_MIX_L
JV068
JV135
RV039
12k
RV951
0R
4HD
RV038
22k
BV001
GND 1
REC_Y/C 2
BV001P3 3
HA_CSYNC 4
DFFHASEL 5
HD_VID_ENV 6
COMPARATOR 7
PB_Y/C 8
9
GND 10
RV099
10k
TV019
BC848/B
RV098
68k
RV948
0R
4HD
+5VS
RV040
3R3
TV018
RN1402
RV940
4HD
RV035
27k
DV003
LL4448
RV943
4HD
RV060
180k
RV941
2HD LP
RV942
2HD SP
RV061
33k
RV032
100k
CV051
22n
Y5V
+5VS
RV031
560k
RV037
4k7
CSYNC
CV050
56p
C
RV090
100R
PB_YC1
COMPARATOR
VIDEO_ENV
JV001
JV009
PB_Y/C
HA_SEL
JV107
JV108
DFF
TRICK
DV002
LL4448
LV006
0R
+5VS
+5VS
CV132
10n
Y5V
TV008
BC848/B
CV047
100n
Y5V
RV949
0R
RV028
1k5
TV009
RN2402
CV049
22n
Y5V
35
0R
TV010
RN1402
REC_ON
RV027
1k5
CV039
100p
Y5V

NOTE: LV134 &CV134 only available in SA index

20699900 (VIDEO)



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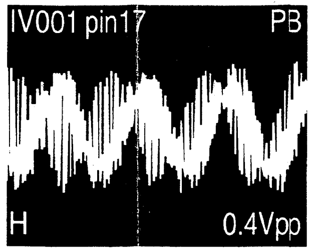

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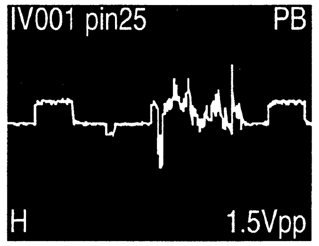

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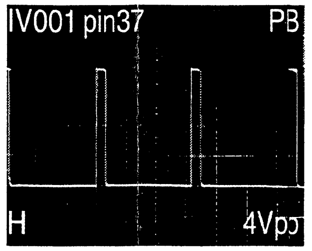

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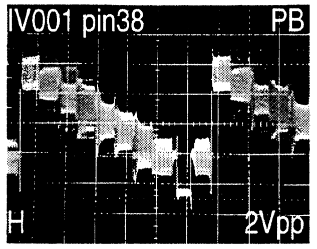

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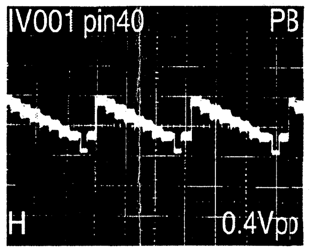

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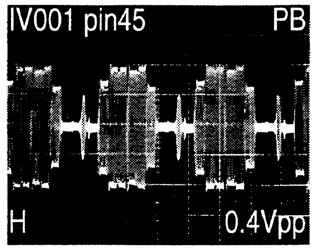

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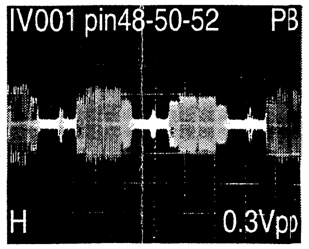
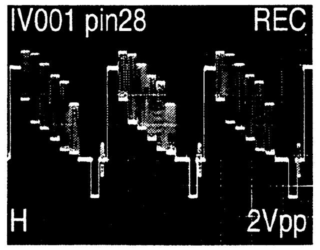


⑧



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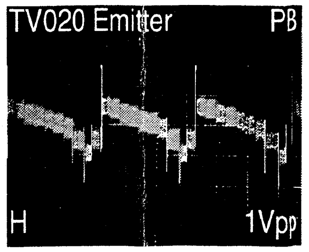


⑩

MEASUREMENTS VIDEO SIGNAL PROCESSING - MESURES TRAITEMENT VIDEO - MESSUNGEN VIDEO SIGNALVERARBEITUNG - MISURE ELABORAZIONE VIDEO - MEDIDAS TRATAMIENTO VIDEO

VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
DV401	1	2.8	2.8	2.7
	2	2.5	2.5	2.5
	3	2.8	2.6	2.8
IV001	1	NC	NC	NC
	2	0	0	0
	3	NC	NC	NC
	4	NC	NC	NC
	5	NC	NC	NC
	6	NC	NC	NC
	7	NC	NC	NC
	8	NC	NC	NC
	9	NC	NC	NC
	10	NC	NC	NC
	11	NC	NC	NC
	12	2.3	2.3	2.3
	13	2.1	1.9	2.1
	14	2.7	0	2.7
	15	0.3	3.2	0
	16	2.7	2.8	2.7
	17	2.7	1.4	2.7
	18	2.2	1.6	2.1
	19	0	0	4.1
	20	3.1	3.1	3.1
	21	0	4.1	0
	22	1.6	1.9	1.6
	23	0	1.6	0
	24	2.5	1.9	2.5
	25	2.2	2.2	2.2
	26	3.1	3.1	3.1
	27	0	0	0
	28	2.3	0.3	2.3
	29	2.2	2.2	2.3
	30	1.8	0.3	1.8
	31	4.1	4.1	4.1
	32	1.8	0.3	1.8
	33	0	0.2	0.2
	34	2.3	2.1	2.3
	35	3.1	3.1	3.1
	36	5	4.9	5
	37	0.6	0.6	0.6
	38	1.9	1.8	1.9
	39	3.3	3.3	3.2
	40	3.1	3	3.1
	41	NC	NC	NC
	42	2	1.9	2
	43	0.4	0.4	0.4
	44	1.8	1.8	1.8
	45	1.9	1.9	1.9
	46	0	2.6	0
	47	5	5	5
	48	2.8	2.8	2.8
	49	4.2	4.2	4.2
	50	2.9	2.8	2.8
	51	4.2	4.2	4.2
	52	3.2	3.2	3.2
	53	0.6	0.5	0.5
	54	2.2	2.2	2.2
	55	5	5	5
	56	5	5	5
	57	0	0	0
	58	NC	NC	NC
	59	2.3	2.3	2.3
	60	3.9	3.9	3.9
	61	1.9	1.9	1.9
	62	0	0	0

VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
	63	4.8	4.8	4.8
	64	4.8	4.8	4.8
	65	0.3	0.3	0.3
	66	0.3	0.3	0.3
	67	0	0	0
	68	0.8	0.8	0.8
	69	3.5	3.4	3.4
	70	5	5	5
	71	NC	NC	NC
	72	NC	NC	NC
	73	NC	NC	NC
	74	NC	NC	NC
	75	NC	NC	NC
	76	5	5	5
	77	NC	NC	NC
	78	NC	NC	NC
	79	NC	NC	NC
	80	NC	NC	NC
IV100	1	2.5	2.5	2.5
	2	5	5	5
	3	2.5	2.5	2.5
	4	NC	NC	NC
	5	2.3	2.3	2.3
	6	NC	NC	NC
	7	1.5	1.5	1.5
	8	8.9	8.9	8.9
	9	2.2	2.2	2.2
	10	0.9	0.9	0.9
	11	0	0	0
	12	0.4	0.4	0.4
	13	1.9	1.9	1.9
	14	0	0	0
IV401	1	0	0	0
	2	0.4	0.4	0.4
	3	2.5	2.5	2.5
	4	2.8	2.7	2.8
	5	2.8	3.1	2.8
	6	0	0	0
	7	0	0	0
	8	0	0	0
	9	0	0	0
	10	5.1	5.1	5.1
	11	5.1	5.1	5.1
	12	0	0	0
	13	NC	NC	NC
	14	2.8	2.6	2.8
	15	0	0	0
	16	5	5	5
IV500	1	NC	NC	NC
	2	2.4	2.4	2.4
	3	3.3	3.4	3.3
	4	3.8	3.8	3.8
	5	NC	NC	NC
	6	0	0	0
	7	4.9	4.9	4.9
	8	NC	NC	NC
	9	3.9	3.9	3.8
	10	4	4	4
	11	2.7	2.7	2.7
	12	2.2	2.2	2.2
	13	5	5	5
	14	NC	NC	NC

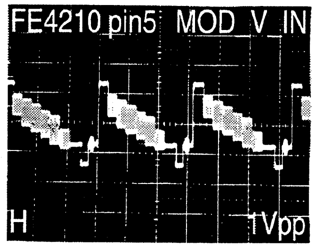
VIDEO		MODE		
LOC	PIN	EE	PLAY	REC.
TV001	E	1.2	1.2	1.2
	B	1.9	1.9	1.9
	C	3.7	3.7	3.7
TV002	E	0	0	0
	B	0	0	0
	C	0.3	0.3	0.3
TV003	E	2.7	2.6	2.6
	B	3.3	3.3	3.3
	C	5	5	5
TV004	E	1.1	1.1	1.1
	B	1.8	1.8	1.8
	C	3.3	3.3	3.3
TV005	E	1.5	1.5	1.5
	B	2.1	2.1	2.1
	C	5	5	5
TV008	E	0.9	0.4	0.9
	B	1.5	1	1.5
	C	5	5	5
TV009	E	5	5	5
	B	5	5	0
	C	1.9	1.8	5
TV010	E	0	0	0
	B	0	0	4.1
	C	5	5	0
TV012	E	1.3	1.3	1.3
	B	1.9	1.9	1.9
	C	5	5	5
TV013	E	2.1	2.1	2.1
	B	1.5	1.5	1.5
	C	0	0	0
TV014	E	1.5	1	1.5
	B	2.1	1.6	2.1
	C	5	5	5
TV020	E	1.6	1.5	1.6
	B	1	1	1
	C	0	0	0
TV044	E	1.6	1.6	1.6
	B	2.3	2.2	2.2
	C	5	5	5
TV070	E	3.6	3.6	3.6
	B	3	2.9	2.9
	C	1.9	1.9	1.9
TV401	E	1.4	1.4	1.4
	B	2	2	2
	C	5	5	5
TV402	E	3.4	3.3	3.4
	B	2.8	2.6	2.8
	C	0	0	0

MEASUREMENTS POWER SUPPLY INTERFACE / TUNER / IF SECTION - MESURES INTERFACE ALIMENTATION / TUNER / FI - MESSUNGEN NETZEIL INTERFACE / TUNER / ZF - MISURE INTERFACCIA ALIMENTAZIONE / TUNER / IF - MEDIDAS INTERFAZ ALIMENTACIÒN / TUNER / IF

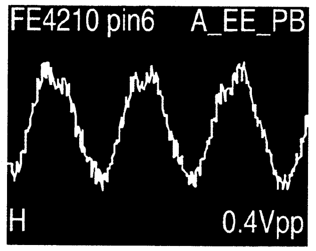
TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
FE4210	1	0	0	0
	2	5.1	5.1	5.1
	3	4.3	4.3	4.3
	4	12	12	12
	5	3.1	2.7	3.1
	6	0	0	0
	7	12.1	12.1	12.1
	8	5.2	5.2	5.1
	9	31.3	32	32.4
	10	5.2	5.2	5.2
	11	5.2	5.2	5.2
	12	0	0	0
	13	1.8	1.8	1.8
II050	1	3.3	3.3	3.3
	2	3.3	3.3	3.3
	3	5	5	5
	4	2.8	2.8	2.8
	5	2.7	2.7	2.7
	6	2.7	2.7	2.7
	7	3.5	3.5	3.5
	8	2.3	2.3	2.4
	9	2.3	2.3	2.3
	10	2.3	2.3	2.3
	11	2.1	2.1	2.1
	12	1.9	1.9	1.9
	13	2.4	2.4	2.7
	14	4.3	4.3	4.3
	15	0.9	0.9	0.9
	16	2.1	2.1	2.1
	17	2.1	2.1	2.1
	18	2.7	2.7	2.7
	19	2.7	2.7	2.7
	20	0	0	0
	21	4.9	4.9	4.9
	22	1.2	1.2	1.2
	23	3.3	3.3	3.3
	24	3.3	3.3	3.3
IS001	1	12	12	12
	2	0	0	0
	3	0	0	0
	4	4.1	4.1	4.1
	5	4.2	4.2	4.1
	6	4.2	4.2	4.1
	7	0	0	0
	8	4.2	4.2	4.1
	9	4.2	4.2	4.1
	10	4.2	4.2	4.1
	11	0.5	0	0.5
	12	0	0	0
	13	4.2	4.2	4.1
	14	4.1	4.2	4.1
	15	4.2	4.2	4.1
	16	0.9	0.9	0.9
	17	4.2	4.2	4.2
	18	0.6	3.5	1.9
	19	12	12	12
	20	12	12	12
	21	0	0	0
	22	0	0	0
	23	4.6	0	4.6
	24	0	0	4.1

TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
TI010	E	0.7	0.7	0.6
	B	0	0	0
	C	0	0	0
TI020	E	0.3	0.3	0.3
	B	1.1	1.1	1.1
	C	4.9	4.9	4.9
TI040	E	0	0	0
	B	2.3	2.3	2.3
	C	0	0	0
TI045	E	0	0	0
	B	0.2	0.1	0
	C	2.3	2.3	2.3
TI050	E	0	0	0
	B	0.1	0.1	0.1
	C	3.5	3.5	3.5
TI055	E	0	1.3	0
	B	0	2	0
	C	4.9	4.9	4.6
TI060	E	0	0	0
	B	0	0	0
	C	4.6	4.6	4.6
TS004	E	0	0	0
	B	0	4.9	0
	C	4.6	0	4.6
TS030	E	12	12	3.5
	B	12	12	3.4
	C	12	12	11.4
TP071	E	5.4	5.4	5.4
	B	4.7	4.7	4.7
	C	1.4	1.4	1.4
TP082	E	5.4	5.4	5.4
	B	7.2	7.2	7.2
	C	0	0	0
TP086	E	0	0	0
	B	0	0	0
	C	5.3	5.3	5.3
TP095	E	19.3	19.3	19.3
	B	19.3	19.3	19.3
	C	5.4	5.4	5.4
TP096	E	0	0	0
	B	0	0	0
	C	19.3	19.3	19.3
TW001	E	0	0	0
	B	0.6	0.6	0.6
	C	0	0	0
TW002	E	33.8	34.9	34.9
	B	0	0	0
	C	33.8	34.9	34.9

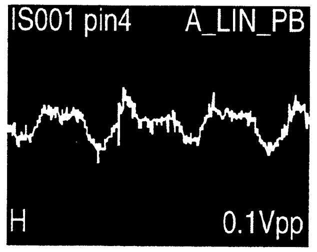
TU / IF		MODE		
LOC	PIN	EE	PLAY	REC.
TW003	E	12.1	12.1	12.1
	B	12.8	12.8	12.8
	C	13.3	13.1	13.1
TW004	E	0	0	0
	B	0.8	0.8	0.8
	C	0	0	0
TW005	E	5.3	5.3	5.3
	B	4.5	4.5	4.5
	C	5.2	5.2	5.2
TW006	E	5.1	5.1	5.1
	B	5.8	5.8	5.8
	C	5.2	5.2	5.2
TW083	E	5.1	5.1	5.1
	B	5.9	5.9	5.9
	C	5.2	5.2	5.2
TZ001	E	0	0	0
	B	0	0	0
	C	4.9	4.9	4.9
TZ010	E	0	0	0.6
	B	0	3.7	0
	C	2.7	0	0
TZ019	E	1.3	0	0
	B	2	0	0
	C	4.9	4.9	4.6
TZ020	E	0	0	0
	B	5	5	5
	C	0	0	0
TZ031	E	2.3	2.2	2.4
	B	3.1	2.8	3
	C	9.7	9.8	9.7
TZ032	E	3.1	3.2	3.1
	B	2.5	2.3	2.4
	C	0	0	0
TZ057	E	3	3	3
	B	2.4	2.3	2.4
	C	0	0	0



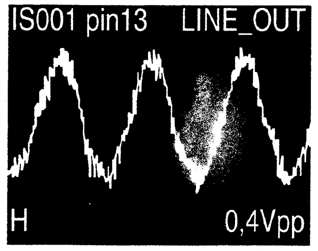
①



②



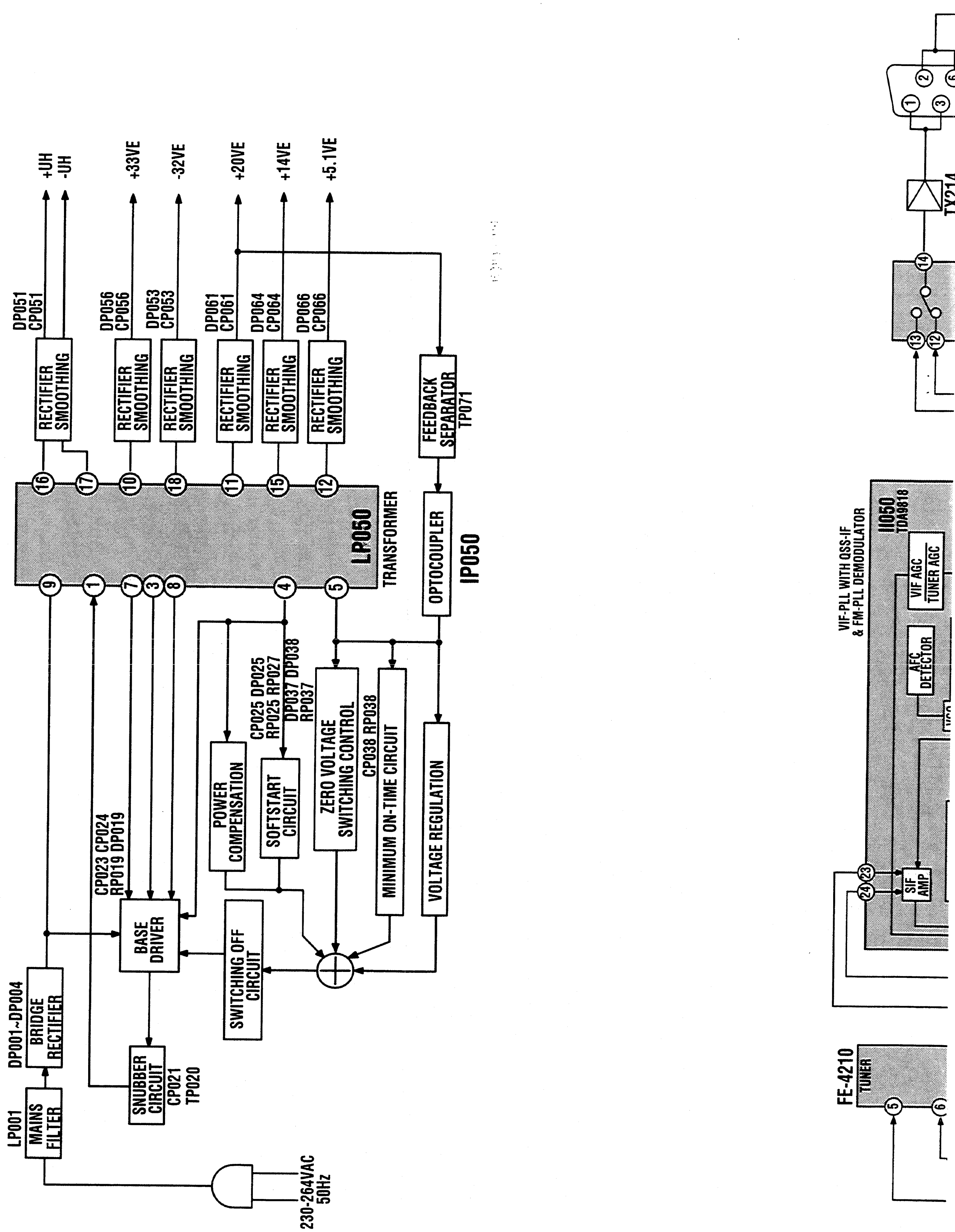
③



④

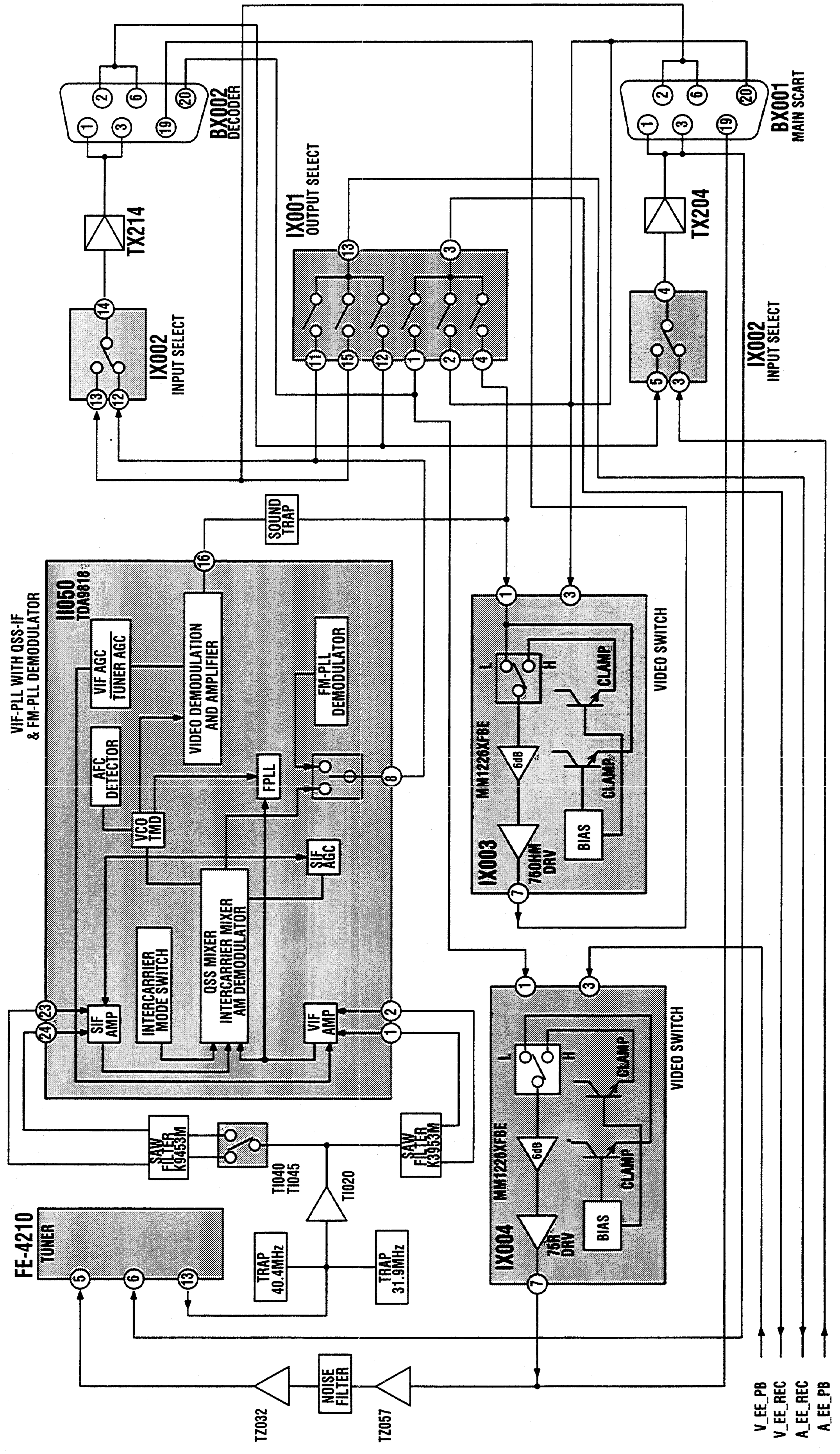
POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNE

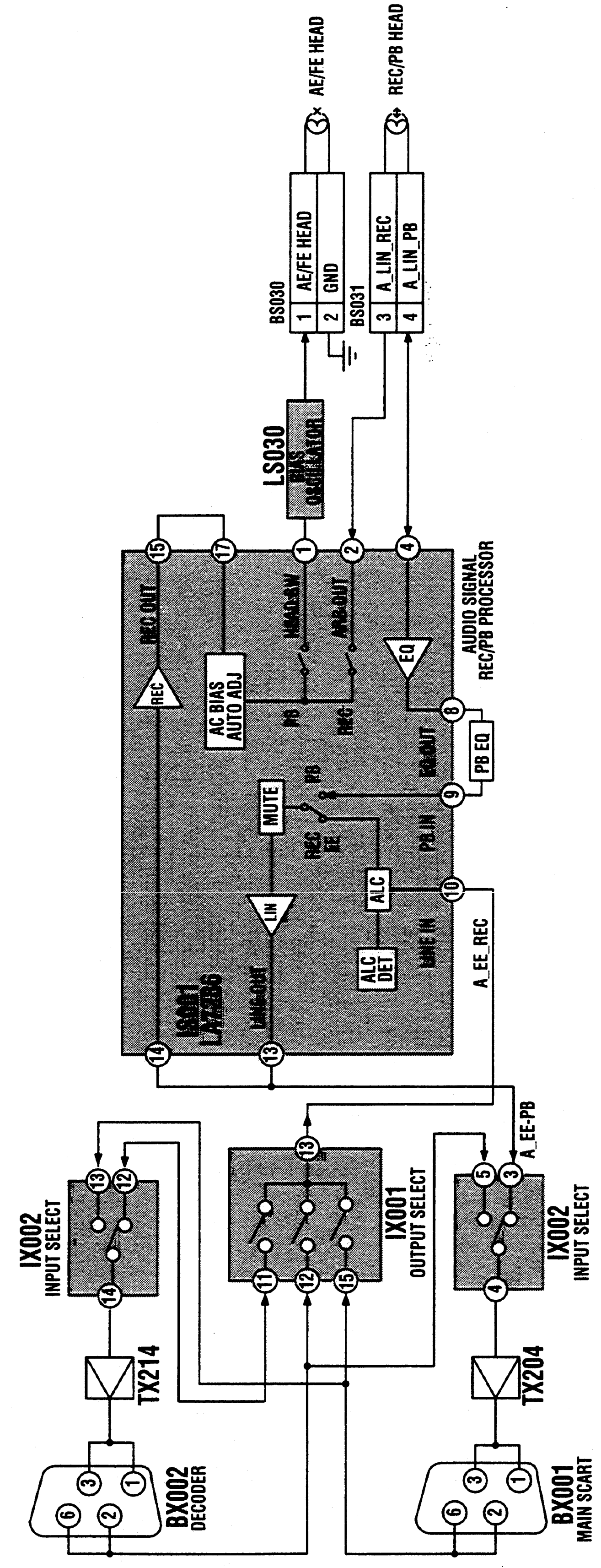
BLOCK DIAGRAM - SCHEMA SY


+UH
-UH
+33VE
-32VE
+20VE
+14VE
+5.1VE
DP051
CP051
DP056
CP056
DP053
CP053
DP061
CP061
DP064
CP064
DP066
CP066
RECTIFIER SMOOTHING
FEEDBACK SEPARATOR
TP071
LP050
TRANSFORMER
OPTOCOUPLER
IP050
CP025 DP025
RP025 RP027
DP037 DP038
RP037
CP038 RP038
POWER COMPENSATION
SOFTSTART CIRCUIT
ZERO VOLTAGE SWITCHING CONTROL
MINIMUM ON-TIME CIRCUIT
VOLTAGE REGULATION
CP023 CP024
RP019 DP019
BASE DRIVER
SWITCHING OFF CIRCUIT
DP001~DP004
BRIDGE RECTIFIER
SNUBBER CIRCUIT
CP021
TP020
LP001
MAINS FILTER
230-264VAC
50Hz
16
17
10
18
11
15
12
9
1
7
3
8
4
5
TX214
14
13
12
II050
TDA9818
VIF-PLL WITH QSS-IF
& FM-PLL DEMODULATOR
VIF AGC
TUNER AGC
AFC DETECTOR
SIF AMP
23
24
FE-4210
TUNER
5
6
1
2
3
6

FACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - INTERFACCIA ALIMENTAZONE / TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF

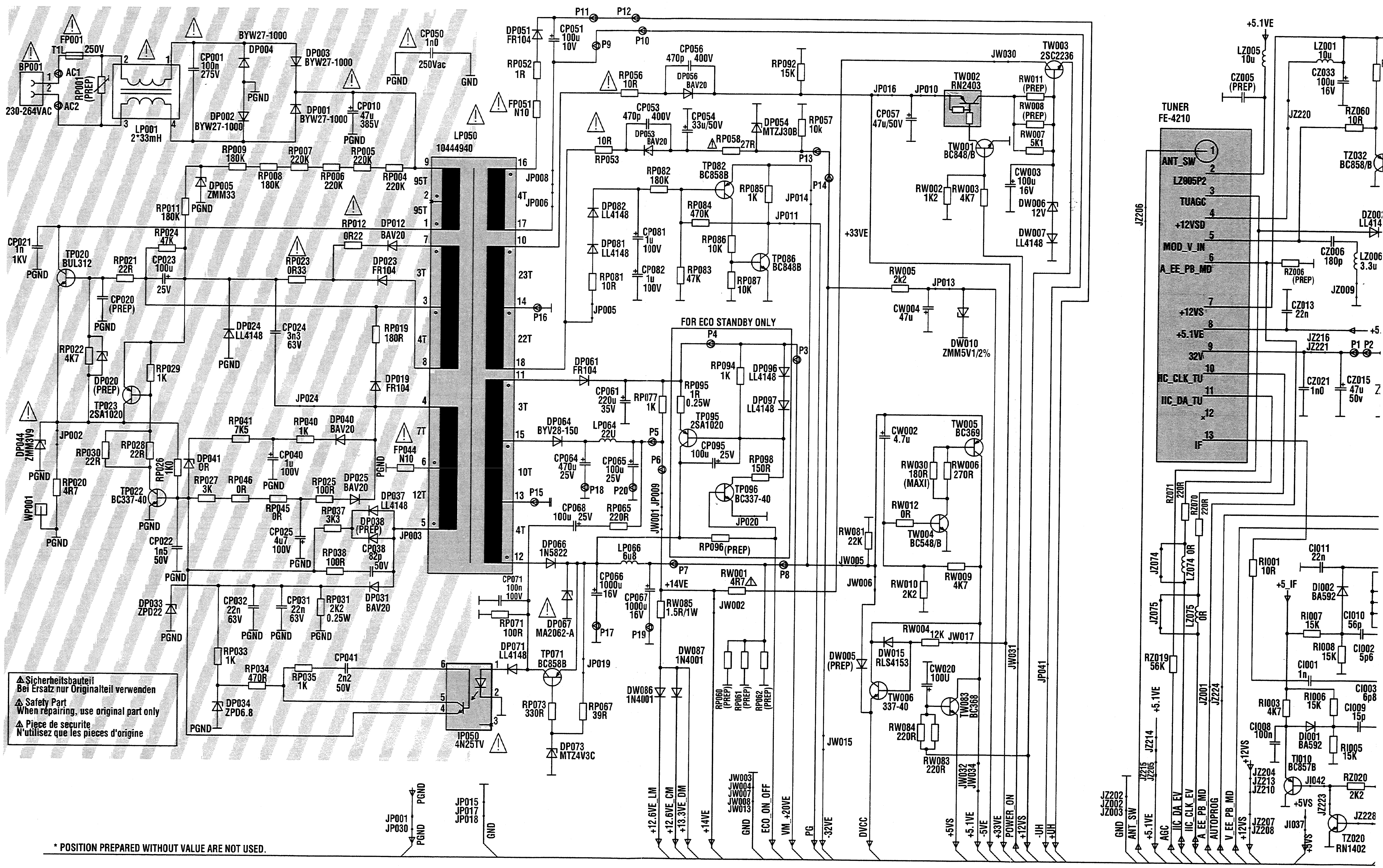
BLOCK DIAGRAM - SCHEMA SYNOPTIQUE - BLOCKSCHALTBILD - SCHEMA A BLOCCHI - ESQUEMA DE BLOQUES


BX002
DECODER
BX001
MAIN SCART
TX214
TX204
IX001
OUTPUT SELECT
IX002
INPUT SELECT
SOUND TRAP
II050
TDA9818
VIF-PLL WITH QSS-IF & FM-PLL DEMODULATOR
VIF AGC
TUNER AGC
VIDEO DEMODULATION AND AMPLIFIER
FM-PLL DEMODULATOR
AFC DETECTOR
VCO TMD
FPLL
SIF AGC
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
SIF AMP
VIF AMP
IX003
MM1228XFBE
VIDEO SWITCH
CLAMP
6dB
75OHM DRV
BIAS
IX004
MM1228XFBE
75R DRV
SAW FILTER K9453M
SAW FILTER K3953M
TI040
TI045
TI020
FE-4210
TUNER
TRAP 40.4MHz
TRAP 31.9MHz
NOISE FILTER
TZ032
TZ057
V_EE_PB
V_EE_REC
A_EE_REC
A_EE_PB


AE/FE HEAD
REC/PB HEAD
BS030
1 AE/FE HEAD
2 GND
BS031
3 A_LIN_REC
4 A_LIN_PB
LS030
BIAS OSCILLATOR
AUDIO SIGNAL REC/PB PROCESSOR
REC OUT
REC
AC BIAS AUTO ADJ
HEAD SW
ARB OUT
EQ
PB
REC
EQ OUT
PB EQ
MUTE
REC EE
PB IN
ALC
ALC DET
LINE IN
LIN
LINE OUT
IS001
LA7286
A_EE_REC
A_EE_PB
IX002
INPUT SELECT
IX001
OUTPUT SELECT
TX214
TX204
BX002
DECODER
BX001
MAIN SCART

POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - ALIMENTAZONE / TUNER / IF - INTE

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BP001
230-264VAC
AC1
AC2
FP001
T1L 250V
RP001 (PREP)
LP001
2*33mH
CP001 100n 275V
BYW27-1000
DP004
DP003 BYW27-1000
DP002 BYW27-1000
DP001 BYW27-1000
PGND
CP010 47u 385V
CP050 1n0 250Vac
GND
LP050 10444940
RP009 180K
RP007 220K
RP005 220K
RP008 180K
RP006 220K
RP004 220K
DP005 ZMM33
RP011 180K
RP012 0R22
DP012 BAV20
CP021 1n 1KV
TP020 BUL312
RP021 22R
RP024 47K
CP023 100u 25V
RP023 0R33
DP023 FR104
CP020 (PREP)
RP022 4K7
DP020 (PREP)
TP023 2SA1020
RP029 1K
DP024 LL4148
CP024 3n3 63V
RP019 180R
DP019 FR104
JP024
JP002
DP044 ZMM3V9
RP030 22R
RP028 22R
RP026 1K0
RP020 4R7
WP001
TP022 BC337-40
DP041 0R
RP027 3K
RP046 0R
RP041 7K5
RP040 1K
DP040 BAV20
CP040 1u 100V
RP045 0R
RP025 100R
DP025 BAV20
FP044 N10
DP037 LL4148
CP025 4u7 100V
RP037 3K3
DP038 (PREP)
CP038 82p 50V
RP038 100R
JP003
CP022 1n5 50V
DP033 ZPD22
CP032 22n 63V
CP031 22n 63V
RP031 2K2 0.25W
DP031 BAV20
RP033 1K
RP034 470R
RP035 1K
CP041 2n2 50V
DP034 ZPD6.8
IP050 4N25TV
95T 25T 95T 3T 4T 7T 12T 23T 22T 3T 10T 4T
JP008 JP006
P11 P12 P9 P10
DP051 FR104
CP051 100u 10V
RP052 1R
FP051 N10
RP056 10R
CP056 470p 400V
DP056 BAV20
CP053 470p 400V
DP053 BAV20
CP054 33u/50V
DP054 MTZJ30B
RP057 10k
RP092 15K
RP053 10R
RP058 27R
P13 P14
RP082 180K
TP082 BC858B
RP085 1K
JP014
JP011
DP082 LL4148
DP081 LL4148
CP081 1u 100V
CP082 1u 100V
RP081 10R
RP084 470K
RP086 10K
RP083 47K
RP087 10K
TP086 BC848B
JP005
P16
FOR ECO STANDBY ONLY
P4 P3
DP061 FR104
CP061 220u 35V
RP077 1K
RP094 1K
DP096 LL4148
DP097 LL4148
RP095 1R 0.25W
TP095 2SA1020
CP095 100u 25V
RP098 150R
TP096 BC337-40
JP020
RP096 (PREP)
DP064 BYV28-150
LP064 22U
CP064 470u 25V
CP065 100u 25V
P5 P6 P15 P18 P20
CP068 100u 25V
RP065 220R
JW001 JP009
DP066 1N5822
LP066 6u8
CP066 1000u 16V
CP067 1000u 16V
P7 P8 P17 P19
+14VE
RW001 4R7
JW002
RW085 1.5R/1W
CP071 100n 100V
RP071 100R
DP067 MA2062-A
DP071 LL4148
TP071 BC858B
JP019
RP073 330R
RP067 39R
DP073 MTZ4V3C
DW087 1N4001
DW086 1N4001
RP060 (PREP) RP061 (PREP) RP062 (PREP)
JW003 JW004 JW007 JW008 JW013
JW030
TW003 2SC2236
TW002 RN2403
JP016 JP010
CP057 47u/50V
RW011 (PREP)
RW008 (PREP)
RW007 5K1
TW001 BC848/B
RW002 1K2
RW003 4K7
CW003 100u 16V
DW006 12V
DW007 LL4148
+33VE
RW005 2k2
JP013
CW004 47u
DW010 ZMM5V1/2%
CW002 4.7u
TW005 BC369
RW030 180R (MAXI)
RW006 270R
RW012 0R
TW004 BC548/B
RW081 22K
JW005
JW006
RW010 2K2
RW009 4K7
RW004 12K
JW017
DW015 RLS4153
DW005 (PREP)
TW006 337-40
CW020 100U
TW083 BC368
RW084 220R
RW083 220R
JW015
JW031 JP041
JW032 JW034
JP001 JP030
JP015 JP017 JP018
PGND GND
+12.6VE_LM +12.6VE_CM +13.3VE_DM +14VE GND ECO_ON_OFF VM_+20VE PG -32VE DVCC +5VS +5.1VE -5VE +33VE POWER_ON +12VS -UH +UH
TUNER FE-4210
ANT_SW LZ005P2 TUAGC +12VSD MOD_V_IN A_EE_PB_MD +12VS +5.1VE 32V IIC_CLK_TU IIC_DA_TU IF
1 2 3 4 5 6 7 8 9 10 11 12 13
JZ206
+5.1VE
LZ005 10u
CZ005 (PREP)
LZ001 10u
CZ033 100u 16V
JZ220
RZ060 10R
TZ032 BC858/B
DZ00 LL414
CZ006 180p
LZ006 3.3u
RZ006 (PREP)
JZ009
CZ013 22n
JZ216 JZ221
P1 P2
CZ021 1n0
CZ015 47u 50v
RZ071 220R
RZ070 220R
JZ074 LZ074 0R
JZ075 LZ075 0R
RZ019 56K
RI001 10R
CI011 22n
+5_IF
DI002 BA592
RI007 15K
CI010 56p
RI008 15K
CI002 5p6
CI001 1n
CI003 6p8
RI006 15K
CI009 15p
RI003 4K7
CI008 100n
DI001 BA592
RI005 15K
TI010 BC857B
JI042
RZ020 2K2
+5VS
JI037
JZ223
JZ228
TZ020 RN1402
JZ202 JZ002 JZ003
JZ215 JZ205
JZ214
JZ001 JZ224
JZ204 JZ213 JZ210
JZ207 JZ208
GND ANT_SW +5.1VE AGC IIC_DA_EV IIC_CLK_EV A_EE_PB_MD AUTOPROG V_EE_PB_MD +12VS +12VS +5VS

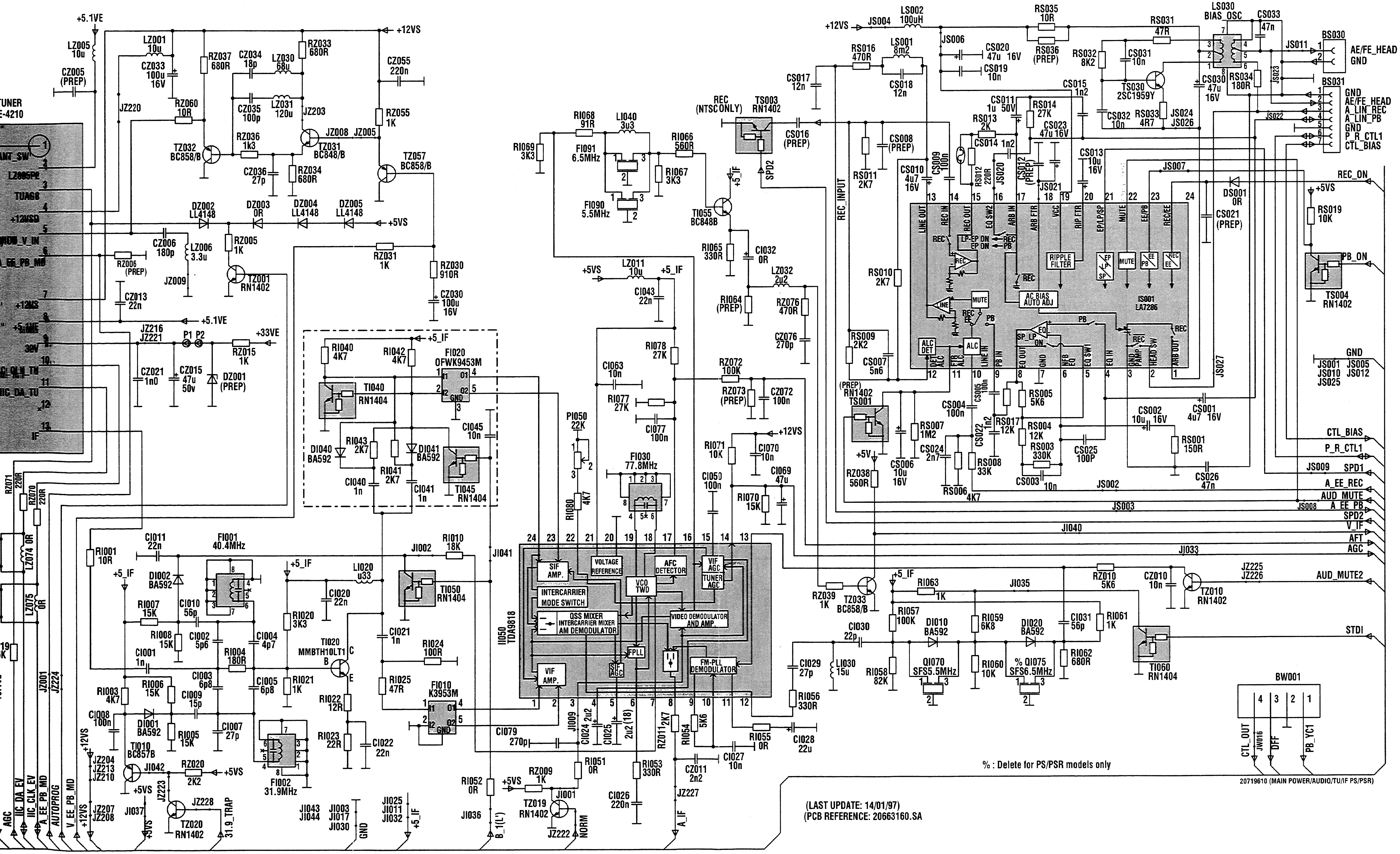
⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden

⚠ Safety Part
When repairing, use original part only

⚠ Pièce de securite
N'utilisez que les pieces d'origine

* POSITION PREPARED WITHOUT VALUE ARE NOT USED.

TAZONE / TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF


TUNER
E-4210
ANT_SW
+5.1VE
+12VS
+5VS
+33VE
+5_IF
TZ032 BC858/B
TZ031 BC848/B
TZ057 BC858/B
TZ001 RN1402
DZ002 LL4148
DZ003 0R
DZ004 LL4148
DZ005 LL4148
DZ001 (PREP)
FI020 0FWK9453M
TI040 RN1404
TI045 RN1404
DI040 BA592
DI041 BA592
FI001 40.4MHz
FI002 31.9MHz
FI010 K3953M
TI020 MMBTH10LT1
TI050 RN1404
TI010 BC857B
TZ020 RN1402
TZ019 RN1402
FI091 6.5MHz
FI090 5.5MHz
TI055 BC848B
FI030 77.8MHz
II050 TDA9818
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VCO TWD
VIDEO DEMODULATOR AND AMP.
FPLL
VIF AMP.
FM-PLL DEMODULATOR
IS001 LA7286
RIPPLE FILTER
MUTE
AC BIAS AUTO ADJ
ALC DET
ALC
TS001 RN1402
TS003 RN1402
TS004 RN1402
TS030 2SC1959Y
LS030 BIAS_OSC
BS030
AE/FE_HEAD
GND
BS031
GND
AE/FE_HEAD
A_LIN_REC
A_LIN_PB
GND
P_R_CTL1
CTL_BIAS
REC (NTSC ONLY)
REC_INPUT
REC_ON
PB_ON
CTL_BIAS
P_R_CTL1
SPD1
A_EE_REC
AUD_MUTE
A_EE_PB
SPD2
V_IF
AFT
AGC
AUD_MUTE2
STDI
TZ033 BC858/B
TZ010 RN1402
TI060 RN1404
QI070 SFS5.5MHz
QI075 SFS6.5MHz
DI010 BA592
DI020 BA592
BW001
CTL_OUT
DFF
PB_YC1
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
+12VS
31.9_TRAP
GND
+5_IF
B_1(L')
NORM
A_IF

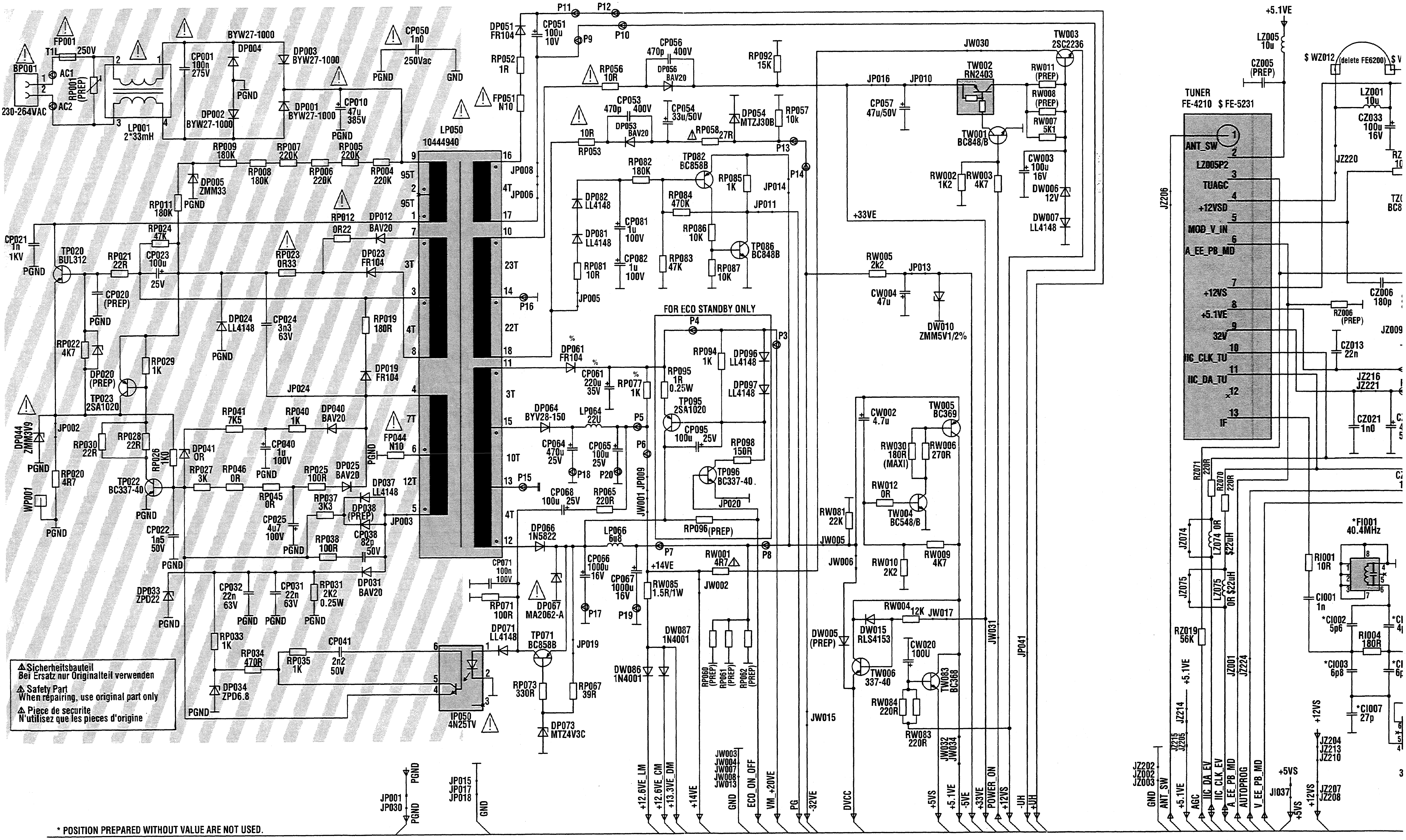
% : Delete for PS/PSR models only

20719610 (MAIN POWER/AUDIO/TU/IF PS/PSR)

(LAST UPDATE: 14/01/97)
(PCB REFERENCE: 20663160.SA)

POWER SUPPLY INTERFACE / TUNER / IF SECTION - INTERFACE ALIMENTATION / TUNER / FI - NETZEIL INTERFACE / TUNER / ZF - ALIMENTAZONE / TUNER / IF - INTERFAZ

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BP001
230-264VAC
FP001
T1L 250V
AC1
AC2
RP001 (PREP)
LP001
2*33mH
CP001
100n
275V
BYW27-1000
DP004
DP002
BYW27-1000
PGND
DP003
BYW27-1000
DP001
BYW27-1000
CP010
47u
385V
CP050
1n0
250Vac
GND
LP050
10444940
RP009 180K
RP008 180K
RP007 220K
RP006 220K
RP005 220K
RP004 220K
DP005
ZMM33
RP011
180K
RP012 0R22
DP012 BAV20
RP024 47K
CP021 1n 1KV
TP020 BUL312
RP021 22R
CP023 100u 25V
RP023 0R33
DP023 FR104
CP020 (PREP)
RP022 4K7
DP020 (PREP)
TP023 2SA1020
RP029 1K
DP024 LL4148
CP024 3n3 63V
RP019 180R
DP019 FR104
JP024
DP044 ZMM3V9
JP002
RP030 22R
RP028 22R
RP026 1K0
RP041 7K5
RP040 1K
DP040 BAV20
DP041 0R
CP040 1u 100V
FP044 N10
RP020 4R7
WP001
TP022 BC337-40
RP027 3K
RP046 0R
RP025 100R
DP025 BAV20
DP037 LL4148
RP045 0R
RP037 3K3
DP038 (PREP)
JP003
CP025 4u7 100V
RP038 100R
CP038 82p 50V
CP022 1n5 50V
DP033 ZPD22
CP032 22n 63V
CP031 22n 63V
RP031 2K2 0.25W
DP031 BAV20
RP033 1K
RP034 470R
RP035 1K
CP041 2n2 50V
DP034 ZPD6.8
IP050 4N25TV
9
95T
2
95T
1
7
3T
3
4T
8
4
7T
6
12T
5
16
4T
17
10
23T
14
22T
18
11
3T
15
10T
13
4T
12
JP008
JP006
P16
P15
DP051 FR104
CP051 100u 10V
RP052 1R
FP051 N10
P11
P12
P9
P10
CP056 470p 400V
DP056 BAV20
RP056 10R
CP053 470p 400V
DP053 BAV20
CP054 33u/50V
DP054 MTZJ30B
RP057 10k
RP092 15K
RP053 10R
RP058 27R
P13
P14
RP082 180K
TP082 BC858B
RP085 1K
JP014
DP082 LL4148
RP084 470K
JP011
CP081 1u 100V
DP081 LL4148
RP086 10K
TP086 BC848B
CP082 1u 100V
RP083 47K
RP087 10K
RP081 10R
JP005
FOR ECO STANDBY ONLY
P4
P3
RP094 1K
DP096 LL4148
DP097 LL4148
RP095 1R 0.25W
TP095 2SA1020
CP095 100u 25V
RP098 150R
TP096 BC337-40
JP020
RP096 (PREP)
DP061 FR104
CP061 220u 35V
RP077 1K
DP064 BYV28-150
LP064 22U
P5
P6
CP064 470u 25V
CP065 100u 25V
P18
P20
CP068 100u 25V
RP065 220R
JW001 JP009
DP066 1N5822
LP066 6u8
P7
P8
CP071 100n 100V
RP071 100R
DP067 MA2062-A
CP066 1000u 16V
CP067 1000u 16V
P17
P19
+14VE
RW085 1.5R/1W
RW001 4R7
JW002
DP071 LL4148
TP071 BC858B
JP019
RP073 330R
RP067 39R
DP073 MTZ4V3C
DW087 1N4001
DW086 1N4001
RP060 (PREP)
RP061 (PREP)
RP062 (PREP)
JW030
TW003 2SC2236
JP016
JP010
TW002 RN2403
RW011 (PREP)
RW008 (PREP)
RW007 5K1
CP057 47u/50V
TW001 BC848/B
CW003 100u 16V
RW002 1K2
RW003 4K7
DW006 12V
DW007 LL4148
+33VE
RW005 2k2
JP013
CW004 47u
DW010 ZMM5V1/2%
CW002 4.7u
TW005 BC369
RW030 180R (MAXI)
RW006 270R
RW012 0R
TW004 BC548/B
RW081 22K
JW005
JW006
RW010 2K2
RW009 4K7
RW004 12K
JW017
DW005 (PREP)
DW015 RLS4153
CW020 100U
TW006 337-40
TW083 BC368
RW084 220R
RW083 220R
JW015
JW031
JP041
JW032 JW034
JP001 JP030
PGND
JP015 JP017 JP018
GND
+12.6VE_LM
+12.6VE_CM
+13.3VE_DM
+14VE
JW003 JW004 JW007 JW008 JW013
GND
ECO_ON_OFF
VM_+20VE
PG
-32VE
DVCC
+5VS
+5.1VE
-5VE
+33VE
POWER_ON
+12VS
-UH
+UH
+5.1VE
LZ005 10u
CZ005 (PREP)
$ WZ012 (delete FE6200)
TUNER
FE-4210 $ FE-5231
1 ANT_SW
2 LZ005P2
3 TUAGC
4 +12VSD
5 MOD_V_IN
6 A_EE_PB_MD
7 +12VS
8 +5.1VE
9 32V
10 IIC_CLK_TU
11 IIC_DA_TU
12
13 IF
JZ206
JZ220
LZ001 10u
CZ033 100u 16V
CZ006 180p
RZ006 (PREP)
CZ013 22n
JZ009
JZ216 JZ221
CZ021 1n0
RZ071 220R
RZ070 220R
JZ074
LZ074 0R $22uH
JZ075
LZ075 0R $22uH
RZ019 56K
JZ001
JZ224
JZ214
JZ215 JZ205
+5.1VE
*FI001 40.4MHz
RI001 10R
CI001 1n
*CI002 5p6
RI004 180R
*CI003 6p8
*CI007 27p
+12VS
JZ204 JZ213 JZ210
JZ202 JZ002 JZ003
GND
ANT_SW
+5.1VE
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
+5VS
JI037
+12VS
JZ207 JZ208
+5VS

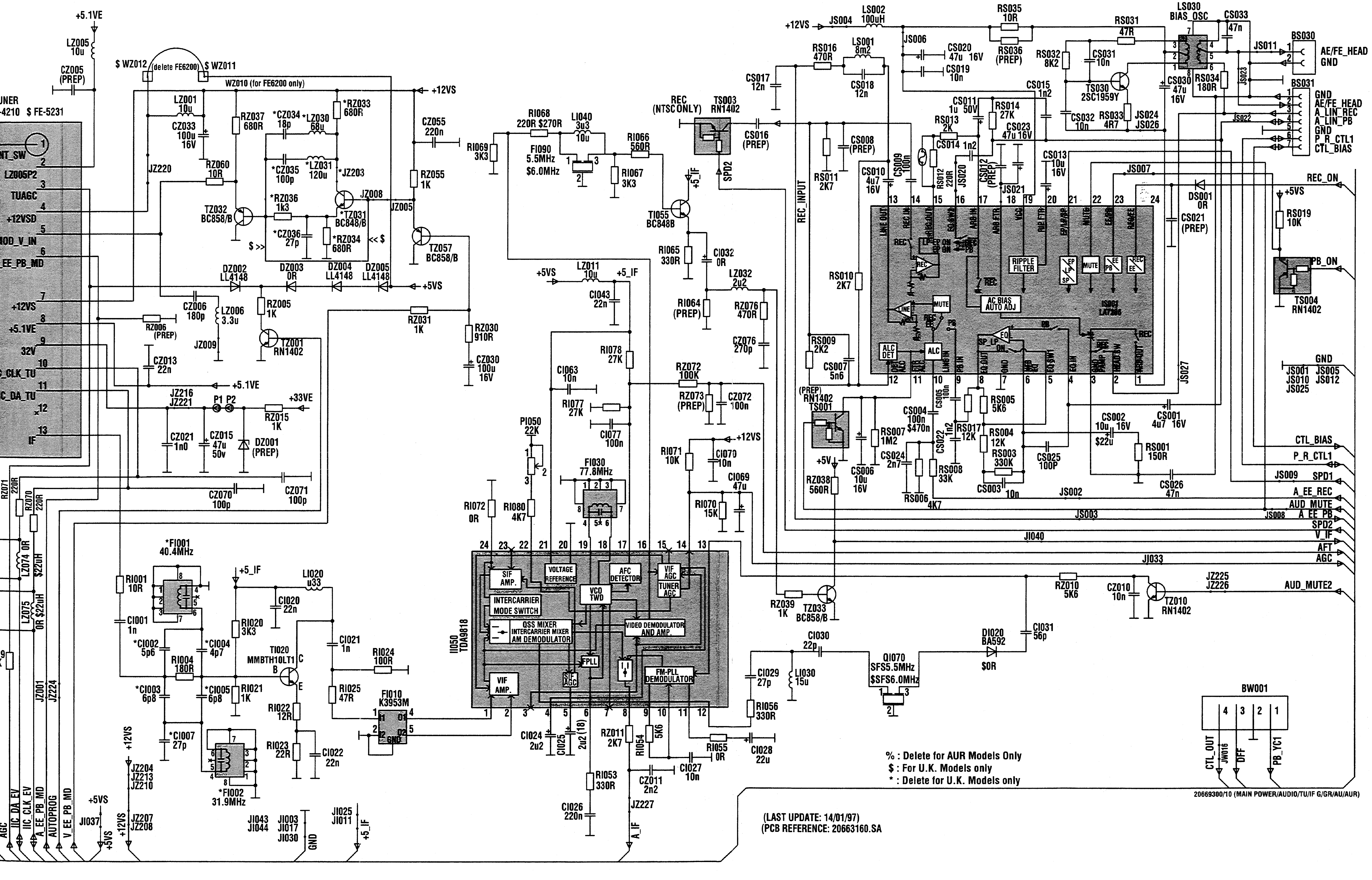
⚠ Sicherheitsbauteil
Bei Ersatz nur Originalteil verwenden

⚠ Safety Part
When repairing, use original part only

⚠ Piece de securite
N'utilisez que les pieces d'origine

* POSITION PREPARED WITHOUT VALUE ARE NOT USED.

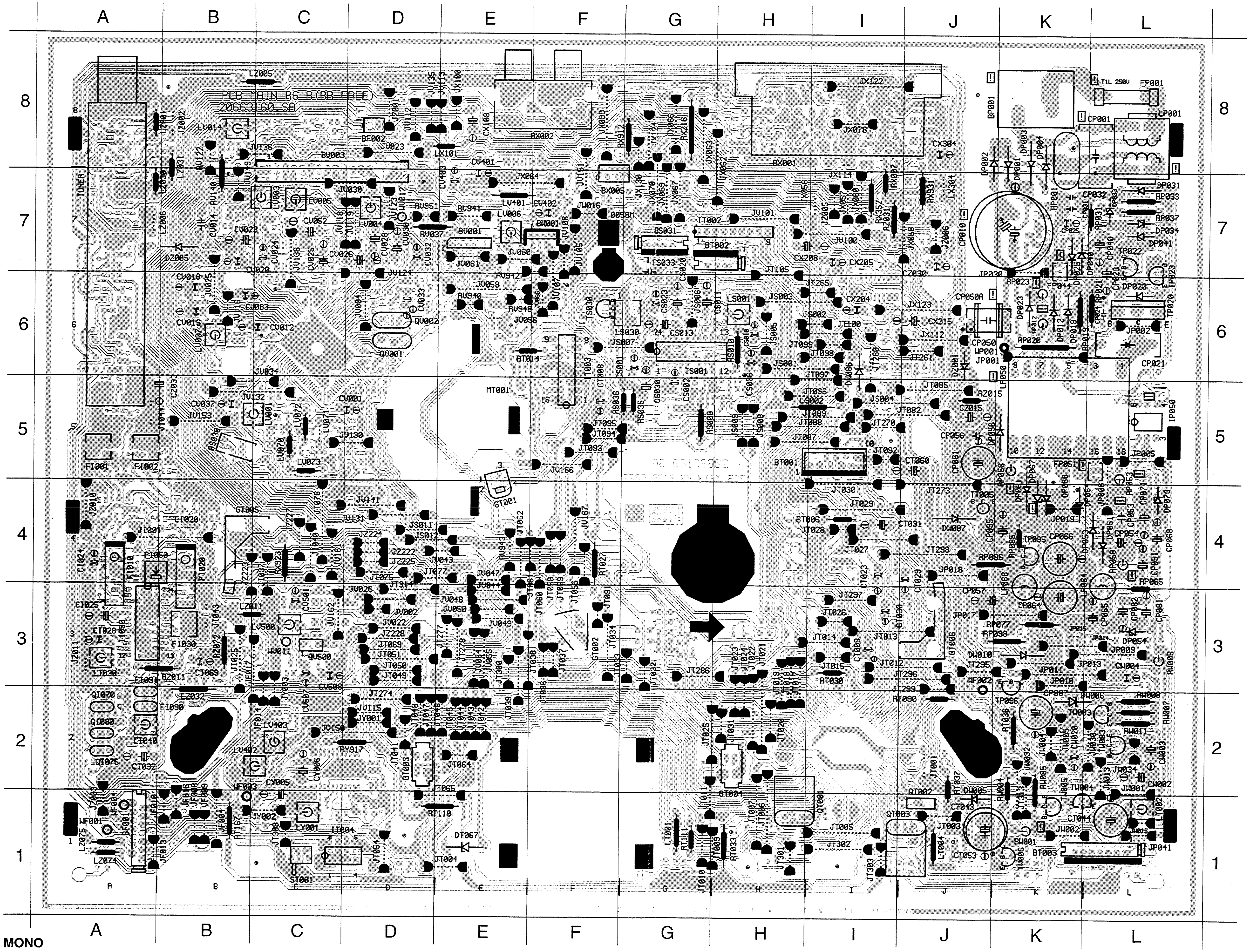
E / TUNER / IF - INTERFAZ ALIMENTACIÒN / TUNER / IF


+5.1VE
LZ005 10u
CZ005 (PREP)
$ WZ012 (delete FE6200) $ WZ011
WZ010 (for FE6200 only)
+12VS
UNER
-4210 $ FE-5231
NT_SW
LZ005P2
TUAGC
+12VSD
MOD_V_IN
_EE_PB_MD
+12VS
+5.1VE
32V
_CLK_TU
C_DA_TU
IF
LZ001 10u
CZ033 100u 16V
RZ037 680R
*CZ034 18p
*LZ030 68u
*RZ033 680R
CZ055 220n
RZ060 10R
JZ220
*CZ035 100p
*LZ031 120u
*JZ203
RZ055 1K
*RZ036 1k3
JZ008
JZ005
TZ032 BC858/B
*TZ031 BC848/B
*CZ036 27p
*RZ034 680R
TZ057 BC858/B
DZ002 LL4148
DZ003 0R
DZ004 LL4148
DZ005 LL4148
+5VS
CZ006 180p
LZ006 3.3u
RZ005 1K
RZ006 (PREP)
JZ009
TZ001 RN1402
RZ031 1K
RZ030 910R
CZ030 100u 16V
CZ013 22n
JZ216 JZ221
P1 P2
+33VE
RZ015 1K
CZ021 1n0
CZ015 47u 50v
DZ001 (PREP)
CZ070 100p
CZ071 100p
RZ071 220R
RZ070 220R
LZ074 0R $22uH
LZ075 0R $22uH
RI001 10R
CI001 1n
*FI001 40.4MHz
*CI002 5p6
*CI004 4p7
RI004 180R
*CI003 6p8
*CI005 6p8
RI021 1K
*CI007 27p
*FI002 31.9MHz
+5_IF
LI020 u33
CI020 22n
RI020 3K3
TI020 MMBTH10LT1
CI021 1n
RI024 100R
RI022 12R
RI023 22R
CI022 22n
RI025 47R
FI010 K3953M
JZ001
JZ224
+12VS
JZ204 JZ213 JZ210
JZ207 JZ208
+5VS
JI037
JI043 JI044
JI003 JI017 JI030
JI025 JI011
GND
+5_IF
AGC
IIC_DA_EV
IIC_CLK_EV
A_EE_PB_MD
AUTOPROG
V_EE_PB_MD
RI068 220R $270R
LI040 3u3
FI090 5.5MHz $6.0MHz
10u
RI069 3K3
RI066 560R
RI067 3K3
REC (NTSC ONLY)
TS003 RN1402
CS016 (PREP)
SPD2
+5_IF
TI055 BC848B
RI065 330R
CI032 0R
LZ032 2u2
RI064 (PREP)
RZ076 470R
CZ076 270p
LZ011 10u
CI043 22n
RI078 27K
RZ072 100K
RZ073 (PREP)
CZ072 100n
PI050 22K
CI063 10n
RI077 27K
CI077 100n
FI030 77.8MHz
RI071 10K
CI070 10n
CI069 47u
RI070 15K
RI072 0R
RI080 4K7
IIC50 TDA9818
SIF AMP.
VOLTAGE REFERENCE
AFC DETECTOR
VIF AGC
TUNER AGC
VCO TWD
INTERCARRIER MODE SWITCH
QSS MIXER INTERCARRIER MIXER AM DEMODULATOR
VIDEO DEMODULATOR AND AMP.
FPLL
SIF AGC
FM-PLL DEMODULATOR
VIF AMP.
CI024 2u2
CI025 2u2 (18)
RZ011 2K7
RI054 5K6
RI053 330R
CI026 220n
CZ011 2n2
CI027 10n
RI055 0R
CI028 22u
JZ227
A_IF
LS002 100uH
JS004
RS016 470R
LS001 8m2
JS006
CS020 47u 16V
CS019 10n
CS017 12n
CS018 12n
RS035 10R
RS036 (PREP)
RS031 47R
RS032 8K2
CS031 10n
TS030 2SC1959Y
LS030 BIAS_OSC
CS033 47n
CS030 47u 16V
RS034 180R
JS011
JS023
BS030 AE/FE_HEAD GND
BS031 GND AE/FE_HEAD A_LIN_REC A_LIN_PB GND P_R_CTL1 CTL_BIAS
CS015 1n2
CS032 10n
RS033 4R7
JS024 JS026
JS022
CS011 1u 50V
RS014 27K
RS013 2K
CS023 47u 16V
CS014 1n2
CS008 (PREP)
RS011 2K7
CS010 4u7 16V
CS009 100n
RS012 220R
JS020
CS012 (PREP)
JS021
CS013 10u 16V
JS007
REC_INPUT
REC_ON
+5VS
DS001 0R
CS021 (PREP)
RS019 10K
PB_ON
TS004 RN1402
RS010 2K7
RIPPLE FILTER
MUTE
AC BIAS AUTO ADJ
IS001 LA7286
ALC DET
ALC
RS009 2K2
CS007 5n6
(PREP) RN1402 TS001
CS004 100n $470n
RS007 1M2
CS005 100n
RS005 5K6
RS004 12K
RS003 330K
RS017 12K
CS022 1n2
CS024 2n7
CS006 10u 16V
RS008 33K
RS006 4K7
CS003 10n
CS025 100P
CS002 10u 16V $22u
CS001 4u7 16V
RS001 150R
CS026 47n
JS002
JS003
JS027
GND
JS001 JS005 JS010 JS012 JS025
CTL_BIAS
P_R_CTL1
JS009 SPD1
A_EE_REC
AUD_MUTE
JS008 A_EE_PB
SPD2
V_IF
AFT
AGC
JI040
JI033
RZ038 560R
RZ039 1K
TZ033 BC858/B
RZ010 5K6
CZ010 10n
TZ010 RN1402
JZ225 JZ226
AUD_MUTE2
CI030 22p
CI029 27p
LI030 15u
RI056 330R
QI070 SFS5.5MHz $SFS6.0MHz
DI020 BA592 $0R
CI031 56p
BW001
CTL_OUT
JW016
DFF
PB_YC1
20669300/10 (MAIN POWER/AUDIO/TU/IF G/GR/AU/AUR)

% : Delete for AUR Models Only
$: For U.K. Models only
* : Delete for U.K. Models only

(LAST UPDATE: 14/01/97)
(PCB REFERENCE: 20663160.SA)

Main P.C.B. components side • Circuit imprimé de la platine principale côté composants • Hauptleiterplatte Bestückungsseite Piastra principale lato componenti • Platina principal lado componentes


A
B
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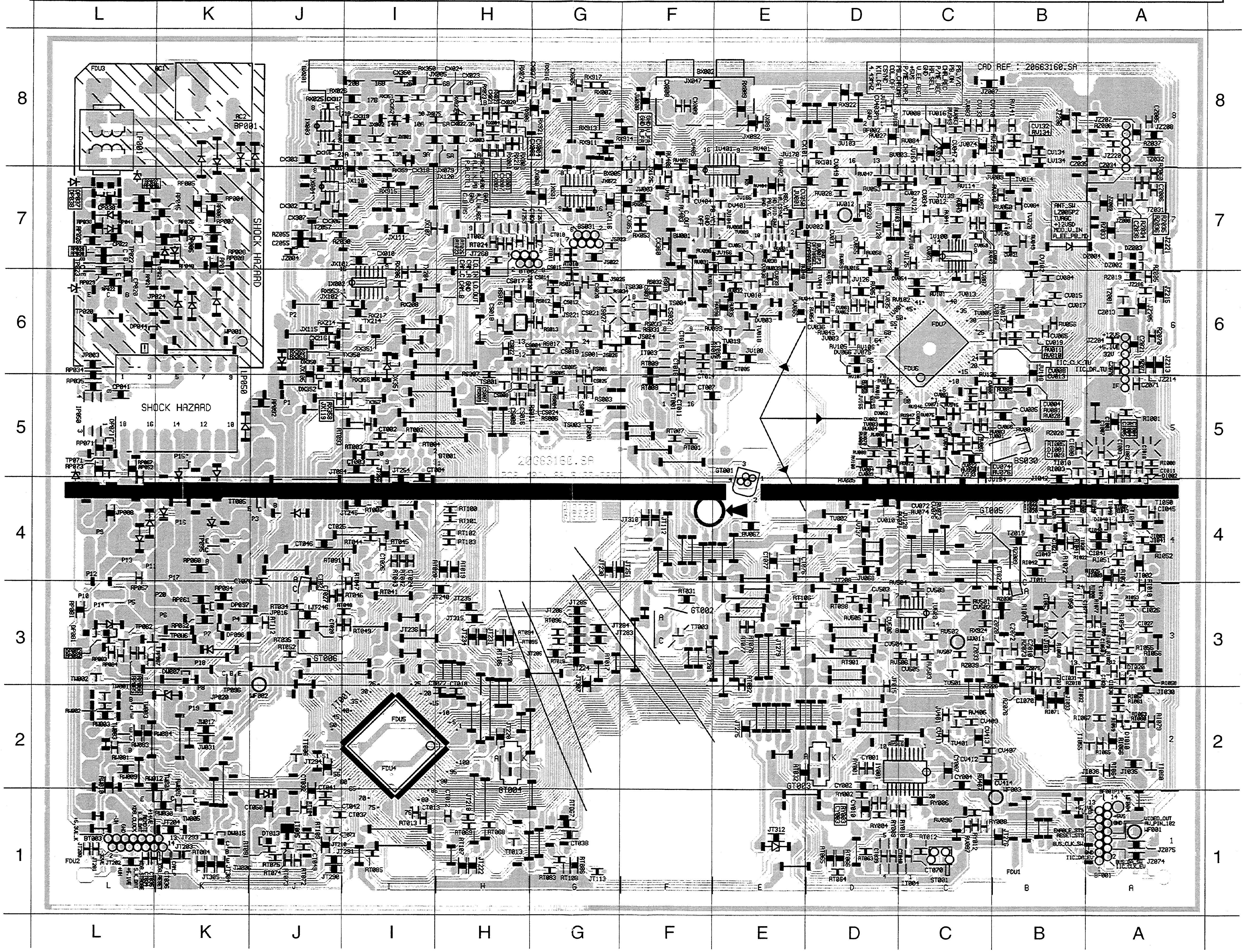
1
PCB MAIN R6 B(BR FREE)
20663160 SA
TUNER
T1L 250V
FP001
LP001
BP001
CP001
MT001
BX001
BX002
JX122
JX078
GT001
DT067
ST001
LY001
IT004
QT001
QT002
QT003
LT001
LT004
RT110
LV500
LV403
LV402
QV500
QV001
QV002
LZ005
LZ074
LZ075
WF001
BF001
CT053
CP050
JP001
BT001
BT002
BT003
IS001
IS030
LS001
LS030
RV917
F1002
F1001

Main P.C.B. Solder side • Circuit imprimé de la platine principale côté cuivre • Hauptleiterplatte Lötseite Piastra principale lato saldature • Platina principal lado del cobre


L
K
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D
C
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A
8
7
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5
4
3
2
1
CAD REF : 20663160.SA
SHOCK HAZARD
SHOCK HAZARD
20663160.SA
FDU5
FDU4
FDU6
FDU7
GT001
GT002
GT003
GT004
GT005
GT006

COMPONENTS LOCATION - LOCALISATION DES ELEMENTS - LAGE DER BAUTEILE LOCALIZZAZIONE DEI COMPONENTI - LOCALIZACION DE LOS COMPONENTS

* SOLDER SIDE - COTE CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE

BF001	A1
BF001*	A1
BF002	D8
BF002*	D8
BP001	J8
BP001*	K8
BS003	C8
BS030	B5
BS031	G7
BS031*	G7
BT001	H5
BT001*	H5
BT002	G7
BT002*	H6
BT003	K1
BT003*	L1
BV001	E7
BV003*	C8
BV003*	D8
BW001	F7
BW001*	F7
BX001	H8
BX001*	J8
BX002	F8
BX002*	F8
BX005	F7
BX005*	G7

CI001*	A5
CI002*	A5
CI003*	A5
CI004*	A5
CI005*	A5
CI007*	A5
CI008*	B5
CI009*	B5
CI010*	A5
CI011*	A5
CI022*	B4
CI024	A4
CI025	A3
CI026*	A3
CI027*	A3
CI028	A3
CI028*	B4
CI029*	A3
CI031*	B3
CI032	A2
CI038*	A3
CI040*	A4
CI041*	A4
CI043*	B4
CI045*	A4
CI058*	A3
CI063*	B3
CI069	B3
CI070*	B2
CI077*	B3
CI079*	A3
CP010	J7
CP020*	L6
CP021	L6
CP022*	L7
CP024	L6
CP025	K7
CP031	K7
CP032	L7
CP038*	L7
CP040	L7
CP041*	L5
CP050	J6
CP050	J6
CP051	L4
CP053	L4
CP053	L4
CP054	L4
CP056	J5
CP057	J3
CP061	J5

CP064	K3
CP065	L3
CP066	K4
CP068	L4
CP071	L4
CP081	L3
CP082	L3
CP087	K2
CP095	J4
CS001	F6
CS002	G5
CS003*	G5
CS004*	G6
CS006	H5
CS007*	H5
CS008*	H5
CS009*	H5
CS010	H6
CS011	H6
CS012*	G6
CS013	G6
CS014*	G6
CS015*	G7
CS016*	H5
CS017*	H6
CS018*	H6
CS019*	G6
CS020	G7
CS021*	G6
CS022*	F6
CS022*	H6
CS023	G6
CS024*	G5
CS026*	G5
CS026*	G6
CS030	G5
CS031*	F6
CS033	G7
CT001*	F5
CT002*	I5
CT003*	I5
CT004*	I5
CT005*	E6
CT006*	E6
CT007*	F5
CT008	F6
CT009	I3
CT010*	C1
CT011*	F5
CT012*	H1
CT012*	I1
CT013	J1
CT013*	I1
CT014*	F5
CT016*	F6
CT018*	F6
CT018*	I3
CT020*	G7
CT021*	J4
CT022*	B4
CT023	I4
CT024*	I4
CT025*	I4
CT026*	I4
CT027*	J3
CT028*	J3
CT029	J4
CT030	I3
CT031	J4
CT032*	J2
CT034*	L1
CT035*	L1
CT036*	K1
CT037*	I1
CT038*	G1
CT039*	D1
CT044	K1
CT046*	J4
CT049*	J1
CT050*	J1
CT053	J1
CT060	J5
CT070*	C1
CT071*	I1

CT072*	I3
CT076*	E4
CT077*	E4
CT918*	G7
CV001	D5
CV002*	D5
CV003*	C5
CV004*	B5
CV005*	B5
CV008*	B6
CV010*	D4
CV011*	B6
CV012	C6
CV012*	B7
CV013*	B6
CV014	B7
CV015*	B6
CV016	B6
CV017*	B6
CV018	B6
CV019*	B6
CV020	C7
CV021*	B7
CV022*	C5
CV023	B7
CV024	C7
CV025	C7
CV026	C7
CV027*	C7
CV028	D7
CV029*	D7
CV030	D7
CV031*	D7
CV032	D7
CV033	D6
CV034*	C7
CV035*	D6
CV036*	C5
CV036*	D6
CV037	B5
CV038*	E6
CV039*	E6
CV047*	C8
CV049*	D7
CV050*	E7
CV051*	E7
CV052	C7
CV053*	C7
CV053*	C7
CV055*	D7
CV057*	C7
CV061*	D6
CV062*	D5
CV064*	B7
CV064*	C6
CV065*	B6
CV066*	B5
CV071*	C5
CV072*	C4
CV073*	C5
CV074*	B5
CV075*	C4
CV083	C6
CV084*	B6
CV087*	C6
CV132*	B8
CV133*	C8
CV134*	B8
CV148*	C8
CV258*	C7
CV401	E8
CV403*	D8
CV405*	F8
CV407*	B2
CV409*	C2
CV411*	C2
CV412*	C2
CV413*	C2
CV414*	B2
CV428	E7
CV482	F7
CV484*	F7
CV501	C3
CV502*	C3

CV503*	D3
CV504*	D3
CV505*	C3
CV506*	D3
CV507	C2
CV508	C2
CV509*	C3
CV868*	C7
CW002	L2
CW003	L2
CW004	L3
CW020	K2
CX001*	H7
CX002*	H7
CX003*	H8
CX004*	G8
CX005*	G8
CX007*	H7
CX008*	F8
CX009*	F8
CX010*	I7
CX021*	H8
CX022*	H8
CX023*	H8
CX024*	H8
CX027*	G8
CX028*	H8
CX053*	F7
CX101*	E8
CX108	E8
CX116*	G7
CX204	I6
CX205	I7
CX208	H7
CX215	J6
CX216*	J6
CX302*	J7
CX303*	J8
CX304	J8
CX306*	J7
CX307*	J7
CX314*	J7
CX316*	J8
CX317*	J8
CX318*	I7
CX319*	I8
CX350*	I8
CX352*	I8
CX368*	F7
CY001*	D2
CY002*	D2
CY003*	D1
CY004*	C2
CY005	C2
CY006	C2
CY007*	C2
CY010*	D1
CZ005*	A8
CZ006*	A7
CZ010*	B3
CZ011*	B3
CZ013*	A6
CZ015	J5
CZ021*	A6
CZ030	J7
CZ033	B5
CZ034*	A8
CZ036*	A7
CZ055*	J7
CZ070*	A6
CZ071*	A5
CZ072*	B3
CZ076*	B3
CZ835*	B8

DF041*	A4
DH005	J2
DI001*	B5
DI002*	A5
DI009*	A4
DI010*	A2

DI020*	A3
DI040*	A4
DP001	K8
DP001	L8
DP002	J8
DP003	K8
DP004	K8
DP005*	K7
DP010	L7
DP012	K6
DP019	K6
DP020	L6
DP023	K6
DP024*	K7
DP031	L7
DP033	L7
DP034	L7
DP037*	L7
DP038*	L7
DP041	L7
DP044*	L6
DP051	L4
DP053	K4
DP053	L4
DP054	L3
DP056	J5
DP061	K4
DP064	K4
DP066	K4
DP067	K5
DP071*	L5
DP081*	L3
DP082*	L3
DP096*	K3
DP097*	K3
DR025	K7
DS001*	G5
DT004	E1
DT013*	J1
DT067	E1
DV002*	D7
DV003*	E6
DV065*	E6
DV066*	D6
DV401*	E7
DW006	L2
DW007*	K3
DW010	J3
DW015*	K1
DW086	I6
DW097	J4
DX125*	F7
DX350*	J6
DX351*	I5
DX352*	J5
DZ001	J6
DZ002*	A7
DZ003*	A7
DZ004*	A7
DZ005	B7

FI001	A5
FI002	A5
FI010	A4
FI020	B4
FI030	B3
FI050	B2
FI091	A3
FP001	L8
FP044	K6
FP051	K5

II050	A3
II050*	B3
IP050	L5
IP050*	L5
IS001	G6
IS001*	G6

IT001*	I2
IT002	G7
IT002*	H7
IT003	F6
IT003*	F6
IT004	C1
IT004*	C1
IT005*	J1
IV100*	C7
IV401*	E8
IV500*	C3
IX001*	G7
IX002*	J6
IX004*	J7
IY001*	D2

JC069	G7
JF004	B1
JF008	B1
JF009	B1
JF013	B1
JF014	C2
JF015*	D3
JF016	B1
JF017	B3
JF10	A1
JI002*	A4
JI003*	A4
JI011*	B4
JI017*	B3
JI021	A4
JI025	B3
JI032*	B2
JI033*	B2
JI034	C4
JI035*	A2
JI036*	A2
JI038*	A2
JI040	C4
JI041*	A4
JI042*	B5
JI043	B3
JI044	B5
JP002	L6
JP003*	L6
JP005	L5
JP006	L4
JP008*	L4
JP009	L3
JP010	K3
JP011	K3
JP013	L3
JP014	L3
JP015	K3
JP016*	J3
JP017	J3
JP018	J4
JP019	KA
JP020*	K2
JP024*	K6
JP030	J7
JP041	L1
JP201	J6
JS001	H6
JS002	I6
JS003	H6
JS004	I5
JS005	H6
JS006	G6
JS007	G6
JS008	H5
JS009	H5
JS011	D4
JS012	D4
JS020*	H6
JS021*	G6
JS022*	G7
JS023*	G7
JS024*	F6
JS025*	G6
JS026*	G6
JS027*	G6

JT001	J2
JT003	J1
JT005	I1
JT006	H1
JT007	H1
JT009	H1
JT010	G1
JT011	G1
JT012	I3
JT013	I3
JT014	I3
JT015	I3
JT017	H3
JT018	H3
JT019	H3
JT020	H2
JT021	H3
JT022	H3
JT023	H3
JT024	H3
JT025	G2
JT026	I3
JT027	I4
JT028	H4
JT029	I4
JT030	I4
JT031	H2
JT032	G3
JT033	F3
JT034	F3
JT036	F3
JT037	F3
JT038	F3
JT039	E2
JT042	E2
JT043	E2
JT044	E2
JT045	E2
JT046	E2
JT048	D2
JT048	D2
JT049	D3
JT050	D3
JT051	D3
JT054	D1
JT056	F3
JT058	F3
JT059	F3
JT060	F3
JT061	E3
JT062	E4
JT064	E2
JT064*	J5
JT065	E2
JT069	D3
JT075	D4
JT076	C4
JT077	D4
JT084*	IS
JT087	H5
JT088	I5
JT091	F3
JT092	I5
JT092	J5
JT093	F5
JT094	F5
JT095	F5
JT095	J5
JT096	I5
JT098	I6
JT098	I6
JT099	H6
JT099	I5
JT100	I6
JT105	H7
JT112*	F4
JT113*	G1
JT200*	L1
JT201*	F3
JT201*	L1
JT202*	L1
JT203*	K1
JT204*	K1
JT206*	G3

JT206*	H3
JT208*	D4
JT210*	I1
JT218*	H1
JT220*	H2
JT222*	H1
JT224*	G3
JT228*	H3
JT230*	G4
JT231*	H3
JT232*	H3
JT235*	H3
JT236*	I3
JT240*	H3
JT241	D2
JT245*	I4
JT246*	J3
JT251*	F4
JT253*	G7
JT254*	I5
JT255*	G7
JT256*	I5
JT260	I6
JT261	J6
JT265	I6
JT268*	H7
JT270	I5
JT273	J4
JT274	D2
JT275*	E2
JT276*	B1
JT277	E3
JT278	E3
JT279*	E3
JT283*	F3
JT284*	F3
JT285*	G3
JT286	G3
JT290*	J1
JT291*	I1
JT293*	K1
JT294*	J2
JT295	J3
JT296	J3
JT297	I3
JT298	J4
JT299	J3
JT300	E3
JT301	H1
JT302	I1
JT303	I1
JT304*	K1
JT305*	K1
JT307*	G3
JT308	C1
JT310*	F4
JT312*	E1
JT313	K1
JT314	D3
JT315*	H3
JV001*	E7
JV002	D3
JV003	D8
JV003*	D6
JV004	D6
JV009*	B7
JV022	D3
JV025	B6
JV026	D3
JV030	D7
JV034	C6
JV043	D4
JV044	E3
JV047	E4
JV048	E3
JV049	E3
JV050	E3
JV050	E7
JV054	E3
JV055	E3
JV056	E6
JV058	E6
JV061	E7
JV066	F6

JV068*	D4
JV073*	C8
JV074*	C8
JV075*	D6
JV083*	C8
JV100	I7
JV101	H7
JV103*	D8
JV104*	E7
JV105	F7
JV106	F7
JV107	F6
JV108*	E6
JV112	D8
JV113	D8
JV114*	D8
JV115	D2
JV116	B6
JV118	C7
JV119	D7
JV120*	D7
JV121*	C7
JV123	D7
JV124	D6
JV125*	C7
JV126*	D6
JV128*	C4
JV130	D5
JV131	D4
JV132	C5
JV133*	C5
JV135	D8
JV136	C8
JV137*	D4
JV138	C7
JV139*	C7
JV141	D4
JV145*	D5
JV148*	B6
JV148*	B7
JV149	B7
JV150	C2
JV151	F7
JV153	B5
JV155*	D5
JV156*	E7
JV160*	C7
JV161	C4
JV162	C3
JV164*	B5
JV164*	C8
JV165*	E7
JV167	F4
JV168*	D8
JV170*	E8
JV186	F5
JV401*	C2
JW001	L2
JW002	K1
JW003*	F7
JW004	K2
JW005	K2
JW008*	F8
JW013	L2
JW015	L1
JW016	F7
JW017*	K2
JW030	L2
JW031*	K2
JW032	K2
JW034	L2
JX001*	I8
JX003*	J8
JX005*	H8
JX005*	I8
JX009*	E8
JX047*	F8
JX050	I7
JX057	I7
JX063	G8
JX064	E7
JX066	G8
JX067	G7
JX068*	G7
JX070	G7
JX072*	G7
JX075*	I8
JX078	I8
JX079*	H7
JX092*	E8
JX099	F8

JX100	E8
JX101*	J7
JX102*	J6
JX105*	J5
JX107*	I7
JX110*	I7
JX111*	I7
JX112	J6
JX114	I7
JX115*	J6
JX119*	J5
JX120*	H7
JX122	I8
JX123	J6
JX124	G8
JX138	G7
JX258	J7
JY001	D2
JY002	C1
JY003	C2
JY056	H7
JY062	H8
JZ001	D8
JZ002	B8
JZ003	A1
JZ004*	C8
JZ004*	J7
JZ005	I7
JZ006	J7
JZ008*	A7
JZ009*	A7
JZ010	A4
JZ011	A3
JZ074*	A1
JZ075*	A1
JZ204*	A6
JZ205*	A6
JZ206*	B8
JZ208*	A8
JZ208*	A8
JZ213*	A6
JZ214*	A5
JZ215*	A6
JZ216*	A6
JZ220*	A8
JZ221*	A7
JZ222	D4
JZ223	B4
JZ224	D4
JZ225	D4
JZ226*	C3
JZ227	C4
JZ228	D3

LI020	B4
LI030	A3
LI040	A2
LP001	L8
LP001*	L8
LP050	K5
LP064	K4
LP066	K4
LS001	H6
LS002	I5
LS030	G6
LT001	G1
LT002	L1
LT004	J1
LV001	C5
LV003	C7
LV004	D7
LV005	C7
LV006	E7
LV007	B6
LV014	B8
LV070	C5
LV071	C5
LV072	C5
LV073	C5
LV134*	B8
LV401	E7
LV402	B2
LV403	C2
LV500	C3
LX006*	G8
LX101	E8
LX304	J7
LY001	C1
LZ001	B8

LZ005	C8
LZ006	B7
LZ011	B3
LZ030	B7
LZ031	B7
LZ032	B2
LZ074	A1
LZ075	A1

PI050	A4

QI070	A2
QI075	A2
QI080	A2
QT001	I1
QT002	J2
QT003	I1
QV001	D6
QV002	D6
QV500	C3

RI001*	A5
RI003*	B5
RI004*	A5
RI005*	B5
RI006*	B4
RI007*	A4
RI020*	B4
RI021*	B4
RI022*	B4
RI023*	B4
RI024*	A4
RI025*	A4
RI040*	A4
RI041*	B4
RI042*	B4
RI043*	A4
RI051*	A4
RI052*	A4
RI053*	A3
RI054*	A3
RI055*	A3
RI056*	A3
RI057*	A2
RI058*	A3
RI060*	A2
RI061*	A2
RI062*	A3
RI063*	A2
RI064*	A2
RI065*	A2
RI066*	A2
RI067*	B2
RI068*	B3
RI069*	A2
RI069*	A3
RI070*	A3
RI071*	B2
RI072*	B4
RI077*	A3
RI078*	B3
RI079*	A2
RI080*	A3
RI088*	A5
RP001	K7
RP004*	K7
RP005*	K7
RP006*	K7
RP007*	K3
RP007*	K7
RP008*	K7
RP009*	K7
RP011*	K7
RP012	K6
RP019	K6
RP020	K6
RP021	L6
RP022*	L6
RP023	K6
RP024*	L6
RP025*	K7
RP027*	L7
RP028*	L7

RP029*	L6
RP031	L7
RP033	L7
RP034*	L6
RP035*	L5
RP037	L7
RP038*	L7
RP038*	L7
RP040*	K7
RP041*	L7
RP045*	K7
RP046*	L7
RP052*	J5
RP056	K5
RP057*	L3
RP058	L4
RP060*	K4
RP061*	K3
RP062*	K3
RP065	L4
RP067*	L5
RP071*	L5
RP073*	L5
RP077	K3
RP081*	L3
RP082*	L3
RP083*	L3
RP084*	L3
RP085*	L3
RP086*	L3
RP092*	J5
RP094*	K3
RP095	K4
RP096	J4
RP098	K3
RS003*	G5
RS004*	G5
RS006*	G5
RS007*	H5
RS008	G5
RS009*	H5
RS010	H6
RS011*	H5
RS012*	G6
RS013*	G6
RS014*	G6
RS016*	H6
RS017*	G6
RS019*	F6
RS031*	F6
RS032*	F6
RS033*	F6
RS034*	G6
RS035	G5
RS036	F5
RT001*	F5
RT001*	K1
RT002*	I5
RT003*	I5
RT004*	IS
RT004*	K1
RT005*	I4
RT006	H4
RT007*	F5
RT008*	F5
RT009*	F6
RT010*	G7
RT011*	G7
RT012*	C1
RT013*	I1
RT014	E6
RT015*	E6
RT017*	G3
RT018*	G3
RT019*	H4
RT020*	H4
RT023*	H7
RT024*	H7
RT025*	H7
RT027	F4
RT030	I3
RT031*	F3
RT032*	E2
RT033	H1
RT034*	J3
RT035*	J3
RT036	K2
RT037	J2
RT041*	I3
RT042*	I4
RT043*	I4

RT044*	I4
RT045*	I4
RT046*	I3
RT047*	I4
RT048*	J3
RT049*	I3
RT052*	J3
RT063*	D1
RT064*	D1
RT065*	D1
RT066*	D1
RT067*	G1
RT068*	H1
RT069*	H1
RT072*	J1
RT073*	J1
RT074*	J1
RT075*	J1
RT076*	E3
RT077*	E3
RT082*	E2
RT083*	G1
RT086*	G1
RT090	J2
RT091*	J4
RT093*	J5
RT094*	H3
RT095*	H3
RT096*	G3
RT098*	D3
RT100*	H4
RT101*	H4
RT102*	H4
RT103*	H4
RT104*	J1
RT105*	H3
RT106*	D3
RT107*	H1
RT108*	G1
RT109*	J1
RT110	E1
RT111	G1
RT112*	J3
RT167	B1
RT901*	D3
RV001*	B5
RV001*	B5
RV002*	B5
RV002*	C5
RV003*	B5
RV004*	D5
RV005*	D5
RV006*	D5
RV007*	D5
RV008*	D5
RV008*	D5
RV010*	B6
RV011*	B6
RV012*	B6
RV012*	C6
RV013*	D7
RV015*	D6
RV015*	D6
RV016*	D7
RV017*	D6
RV018*	D5
RV020*	B5
RV027*	D8
RV028*	D7
RV031*	F7
RV032*	E6
RV035*	E6
RV037	D7
RV038*	E7
RV039*	E7
RV040*	E6
RV041*	C7
RV043*	C7
RV045*	D6
RV047*	D7
RV049*	B7
RV050*	B7
RV051*	D6
RV052*	D6
RV053*	D7
RV054*	D6
RV056*	B6
RV058*	D7
RV059*	D7
RV060*	E7
RV067*	E4

RV070*	D5
RV071*	C4
RV072*	C5
RV073*	C4
RV074*	C4
RV076*	B5
RV076*	C5
RV081*	F6
RV083*	C8
RV084*	C8
RV088*	E6
RV096*	C1
RV097*	C1
RV098*	F7
RV099*	E6
RV099*	F6
RV100*	D5
RV101*	C6
RV106*	D6
RV114*	C7
RV122	B8
RV134*	B8
RV135*	C8
RV136*	C6
RV140	B7
RV141*	B8
RV167*	D5
RV242*	C7
RV401*	E8
RV402*	E7
RV404*	E7
RV405*	F8
RV406*	C2
RV407*	C2
RV408*	F8
RV483*	F7
RV501*	C3
RV502*	C3
RV503*	C3
RV505*	D3
RV506*	C3
RV507*	C3
RV919*	D5
RV920*	D7
RV940	E6
RV941	E7
RV942	E6
RV943	E4
RV945*	C5
RV946*	C5
RV947*	C5
RV948	E6
RV949*	C8
RV950*	C5
RV951	D7
RW001	K1
RW002*	L2
RW003*	L2
RW004	K2
RW004*	K2
RW005	L3
RW006*	K2
RW007	L2
RW008	L2
RW009*	L2
RW010*	L2
RW011	L2
RW012*	L2
RW030*	K1
RW081*	L2
RW083*	L2
RW085	K2
RX001*	H8
RX002*	G8
RX003*	H8
RX004*	H8
RX006*	H8
RX007	I7
RX008*	J8
RX009*	E8
RX021*	H8
RX022*	H8
RX023*	H8
RX024*	H8
RX025*	J8
RX026*	J8
RX052*	F7
RX053*	F7
RX101*	D8
RX206*	I6
RX208*	I6

RX210*	H8
RX214*	J6
RX216	G8
RX217*	I6
RX350*	I8
RX351*	I8
RX352	I7
RX353*	J6
RX355*	J6
RX356*	I5
RX358*	J5
RX359*	I7
RX911*	G8
RX912	F8
RX913*	G8
RX915*	I7
RX916*	G8
RX917*	G8
RX921*	G8
RX922*	D8
RX923	C4
RX924*	C3
RX931	J7
RX953*	J6
RY001*	D2
RY002*	D1
RY003*	D1
RY004*	D1
RY006*	C1
RY008*	B1
RY009*	D1
RY010*	C1
RY012*	C1
RY916*	D2
RY917	D2
RZ005*	A6
RZ006*	A8
RZ009*	B4
RZ010*	B3
RZ011	B3
RZ015	J5
RZ019*	A6
RZ028*	B5
RZ030*	J7
RZ031	I7
RZ033*	A7
RZ034*	A7
RZ035*	A7
RZ036*	A7
RZ037*	A8
RZ038*	B3
RZ039*	C3
RZ055*	J7
RZ060*	A7
RZ070*	A6
RZ071*	A6
RZ072	B3
RZ073*	B3
RZ076*	B2

ST001	C1
ST001	E4
ST001*	C1

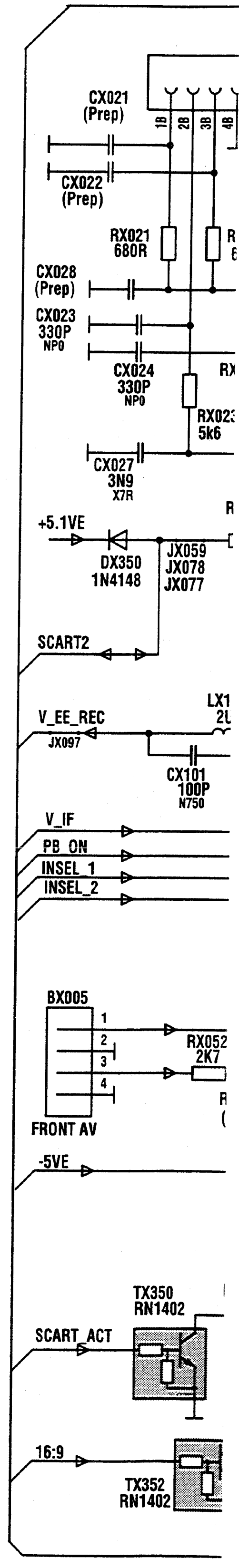
GT002	F3
GT002*	F3
GT003	D2
GT004	H1
GT005	B4
TI010*	B5
TI020*	B4
TI045*	A4
TI048*	A4
TI055*	B2
TI058*	A4
TI068*	A2
TP020	L6
TP020*	L6
TP022	L7
TP022*	L7
TP023	L6
TP023*	L7
TP026*	L7
TP071*	L5

TP082*	L3
TP086*	K3
TP095	K4
TP095*	K4
TP096	K2
TP096*	K2
TS001*	H5
TS003*	G5
TS004*	F6
TS030	F6
TS030*	F6
TT003*	F3
TT005	J4
TT005*	K4
TT006*	J2
TT013*	H1
TV001*	B5
TV002*	D4
TV003*	D5
TV004*	D5
TV005*	C6
TV008*	C8
TV009*	D5
TV009*	E7
TV010*	E6
TV012*	C7
TV013*	C6
TV014*	B7
TV016*	C8
TV018*	E6
TV019*	E6
TV020*	B7
TV044*	D6
TV070*	C5
TV401*	C2
TV402*	F7
TV501*	C3
TW001*	L2
TW002*	L3
TW003	K2
TW003	L2
TW003*	L2
TW004	K2
TW004*	K2
TW005	K2
TW005*	K1
TW006	K1
TW006*	K1
TX204*	I6
TX214*	I6
TX350*	I6
TX351*	I6
TX362*	I5
TZ001*	A6
TZ010*	B3
TZ019*	B4
TZ020*	B3
TZ031*	A7
TZ032*	A8
TZ033*	C3
TZ057*	J7

WF001	A1
WF001*	A1
WF002	J3
WF003*	B2
WF004	A1
WF004*	A1
WF203	B2
WP001	J6
WP001*	K6
WV011	C3
WV011*	C3
WV012	D7
WV012*	D7

I / O INTERFA INTERFACE E

SCHEMATIC DIA



20669000 (I/O INTERFACE)

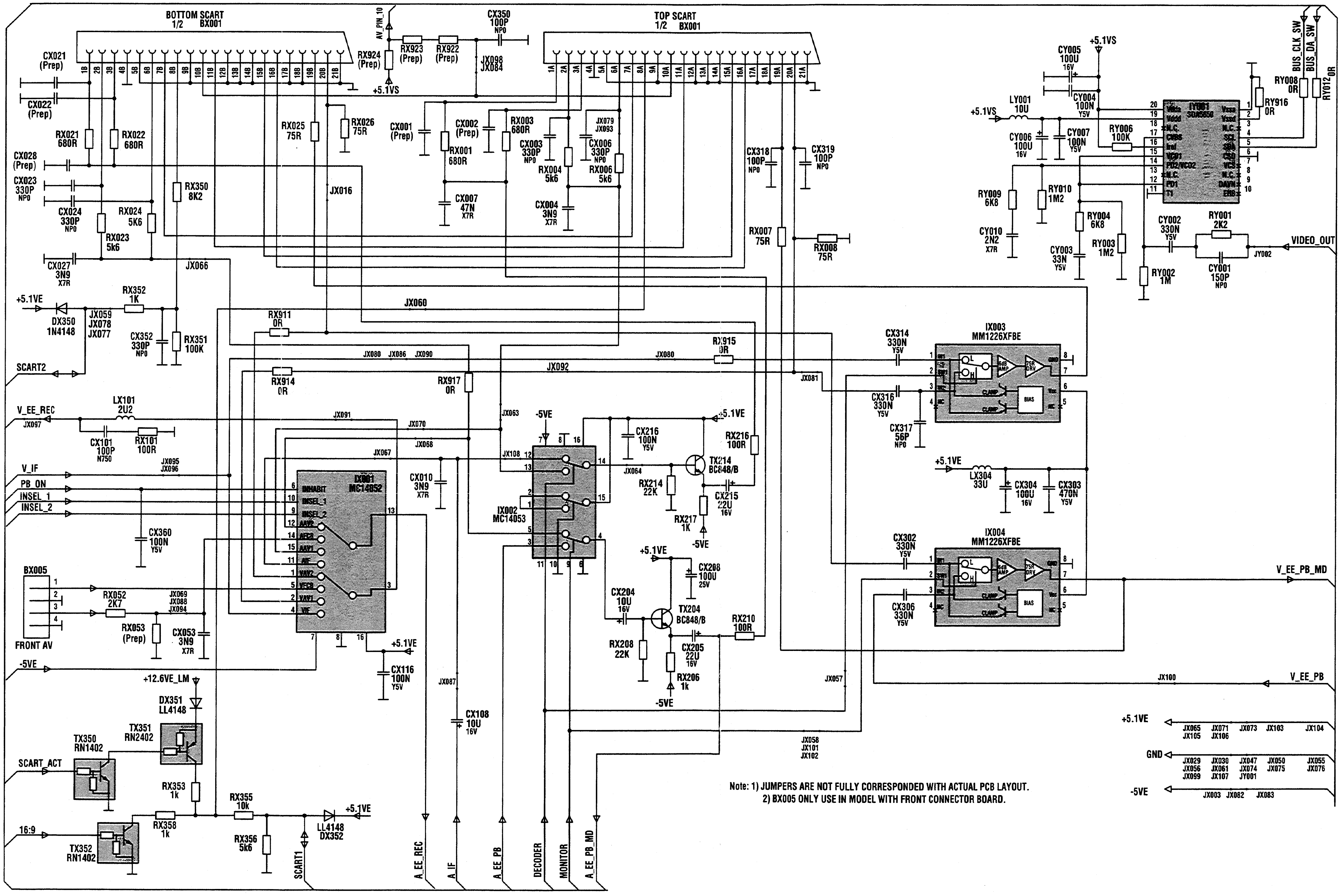
TP082*	L3
TP086*	K3
TP095	K4
TP095*	K4
TP096	K2
TP096*	K2
TS001*	H5
TS003*	G5
TS004*	F6
TS030	F6
TS030*	F6
TT003*	F3
TT005	J4
TT005*	K4
TT006*	J2
TT013*	H1
TV001*	B5
TV002*	D4
TV003*	D5
TV004*	D5
TV005*	C6
TV008*	C8
TV009*	D5
TV009*	E7
TV010*	E6
TV012*	C7
TV013*	C6
TV014*	B7
TV016*	C8
TV018*	E6
TV019*	E6
TV020*	B7
TV044*	D6
TV070*	C5
TV401*	C2
TV402*	F7
TV501*	C3
TW001*	L2
TW002*	L3
TW003	K2
TW003	L2
TW003*	L2
TW004	K2
TW004*	K2
TW005	K2
TW005*	K1
TW006	K1
TW006*	K1
TX204*	I6
TX214*	I6
TX350*	I6
TX351*	I6
TX362*	I5
TZ001*	A6
TZ010*	B3
TZ019*	B4
TZ020*	B3
TZ031*	A7
TZ032*	A8
TZ033*	C3
TZ057*	J7

●—

WF001	A1
WF001*	A1
WF002	J3
WF003*	B2
WF004	A1
WF004*	A1
WF203	B2
WP001	J6
WP001*	K6
WV011	C3
WV011*	C3
WV012	D7
WV012*	D7

I / O INTERFACE - INTERFACE ENTREE / SORTIE - INTERFACE EINGÄNGE / AUSGANG - INTERFACCIA INGRESSO / USCITA - INTERFACE ENTRADA / SALIDA

SCHEMATIC DIAGRAM -SCHEMA DE PRINCIPE - SCHALTBILD - SCHEMA - ESQUEMA


BOTTOM SCART
1/2 BX001
TOP SCART
1/2 BX001
AV_PIN_10
CX350
100P
NPO
RX924
(Prep)
RX923
(Prep)
RX922
(Prep)
JX098
JX084
+5.1VS
CX021
(Prep)
CX022
(Prep)
RX021
680R
RX022
680R
CX028
(Prep)
CX023
330P
NPO
CX024
330P
NPO
RX024
5K6
RX023
5k6
RX350
8K2
CX027
3N9
X7R
RX025
75R
RX026
75R
CX001
(Prep)
CX002
(Prep)
RX001
680R
RX003
680R
CX003
330P
NPO
RX004
5k6
JX079
JX093
CX006
330P
NPO
RX006
5k6
CX007
47N
X7R
CX004
3N9
X7R
JX016
JX066
CX318
100P
NPO
CX319
100P
NPO
RX007
75R
RX008
75R
+5.1VE
RX352
1K
DX350
1N4148
JX059
JX078
JX077
CX352
330P
NPO
RX351
100K
SCART2
JX060
RX911
0R
RX914
0R
RX917
0R
RX915
0R
JX080
JX086
JX090
JX092
JX081
V_EE_REC
JX097
LX101
2U2
CX101
100P
N750
RX101
100R
JX091
JX070
JX068
JX067
JX095
JX096
V_IF
PB_ON
INSEL_1
INSEL_2
IX001
MC14052
INHABIT
INSEL_1
INSEL_2
CX010
3N9
X7R
CX360
100N
Y5V
JX063
-5VE
JX108
IX002
MC14053
CX216
100N
Y5V
JX064
+5.1VE
RX216
100R
TX214
BC848/B
RX214
22K
CX215
22U
16V
RX217
1K
-5VE
BX005
FRONT AV
RX052
2K7
RX053
(Prep)
JX069
JX088
JX094
CX053
3N9
X7R
+5.1VE
CX116
100N
Y5V
-5VE
+5.1VE
CX208
100U
25V
CX204
10U
16V
TX204
BC848/B
RX210
100R
RX208
22K
CX205
22U
16V
RX206
1k
-5VE
+12.6VE_LM
DX351
LL4148
TX351
RN2402
TX350
RN1402
SCART_ACT
RX353
1k
RX355
10k
+5.1VE
16:9
RX358
1k
LL4148
DX352
RX356
5k6
TX352
RN1402
JX087
CX108
10U
16V
SCART1
A_EE_REC
A_IF
A_EE_PB
DECODER
MONITOR
A_EE_PB_MD
JX057
JX058
JX101
JX102
CY005
100U
16V
+5.1VS
CY004
100N
Y5V
LY001
10U
+5.1VS
CY006
100U
16V
CY007
100N
Y5V
RY006
100K
IY001
SDA5650
RY008
0R
RY916
0R
RY012
0R
BUS_CLK_SW
BUS_DA_SW
RY009
6K8
RY010
1M2
RY004
6K8
CY010
2N2
X7R
CY003
33N
Y5V
RY003
1M2
CY002
330N
Y5V
RY001
2K2
VIDEO_OUT
JY002
CY001
150P
NPO
RY002
1M
CX314
330N
Y5V
IX003
MM1226XFBE
CX316
330N
Y5V
CX317
56P
NPO
+5.1VE
LX304
33U
CX304
100U
16V
CX303
470N
Y5V
CX302
330N
Y5V
IX004
MM1226XFBE
CX306
330N
Y5V
V_EE_PB_MD
JX100
V_EE_PB
+5.1VE
JX065
JX071
JX073
JX103
JX104
JX105
JX106
GND
JX029
JX030
JX047
JX050
JX055
JX056
JX061
JX074
JX075
JX076
JX099
JX107
JY001
-5VE
JX003
JX082
JX083

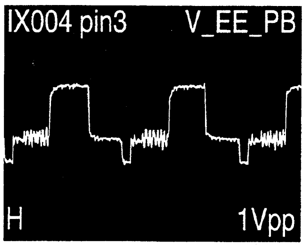
Note: 1) JUMPERS ARE NOT FULLY CORRESPONDED WITH ACTUAL PCB LAYOUT.
2) BX005 ONLY USE IN MODEL WITH FRONT CONNECTOR BOARD.

20669000 (I/O INTERFACE)

MEASUREMENTS I / O INTERFACE - MESURES INTERFACE ENTREE / SORTIE - MESSUNGEN EINGÄNGE / AUSGANG SCHNITTSTELLEN - MISURE INTERFACCIA INGRESSO / USCITA - MEDIDAS INTERFACE ENTRADA / SALIDA

INTERFACE		MODE		
LOC	PIN	EE	PLAY	REC.
IX001	1	0	0	0
	2	0	0	0
	3	1.4	1.3	1.3
	4	1.4	0.2	1.3
	5	0	0	0
	6	0	5	0
	7	-5	-5	-5
	8	0	0	0
	9	5.1	5.1	5.1
	10	5.1	5.1	5.1
	11	0	0	0
	12	0	0	0
	13	0	0	0
	14	0	0	0
	15	-0.3	-0.3	-0.3
	16	5.1	5.1	5.1
IX002	1	5.2	5.2	5.2
	2	5.2	5.2	5.2
	3	0	0	0
	4	0	0	0
	5	0	0	0
	6	0	0	0
	7	-5	-5	-5
	8	0	0	0
	9	4.3	4.3	4.4
	10	0	0	0
	11	3.9	3.9	3.9
	12	0	0	0
	13	-0.3	-0.3	-0.3
	14	-0.3	-0.3	-0.3
	15	5.2	5.2	5.2
	16	5.2	5.2	5.2
IX003	1	1.9	1.8	1.8
	2	3.9	3.9	3.9
	3	1.3	1.3	1.3
	4	NC	NC	NC
	5	NC	NC	NC
	6	5.1	5.1	5.1
	7	1.4	1.4	1.4
	8	0	0	0

INTERFACE		MODE		
LOC	PIN	EE	PLAY	REC.
IX004	1	1.4	1.4	1.4
	2	4.4	4.3	4.3
	3	1.8	1.8	1.8
	4	NC	NC	NC
	5	NC	NC	NC
	6	5.1	5.1	5.1
	7	2.3	2.4	2.3
	8	0	0	0
TX204	E	-1	-1	-1
	B	-0.3	-0.3	-0.3
	C	5.1	5.2	5.2
TX214	E	-1	-1	-1
	B	-0.3	-0.3	-0.3
	C	5.2	5.2	5.2
TX350	E	0	0	0
	B	0	5	0
	C	13.8	0	13.2
TX351	E	13.8	12.4	13.2
	B	13.8	0	13.2
	C	0	12.4	0
TX352	E	0	0	0
	B	0	0	0
	C	0	11	0



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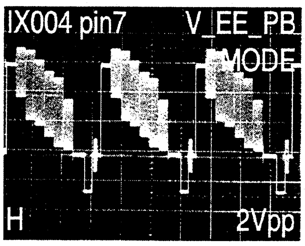

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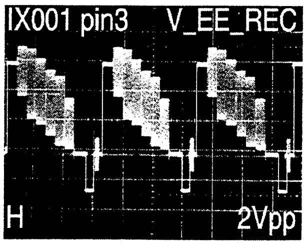


③

NOTES / NOTES / NOTIZEN / NOTA / NOTA

THOMSON CONSUMER ELECTRONICS

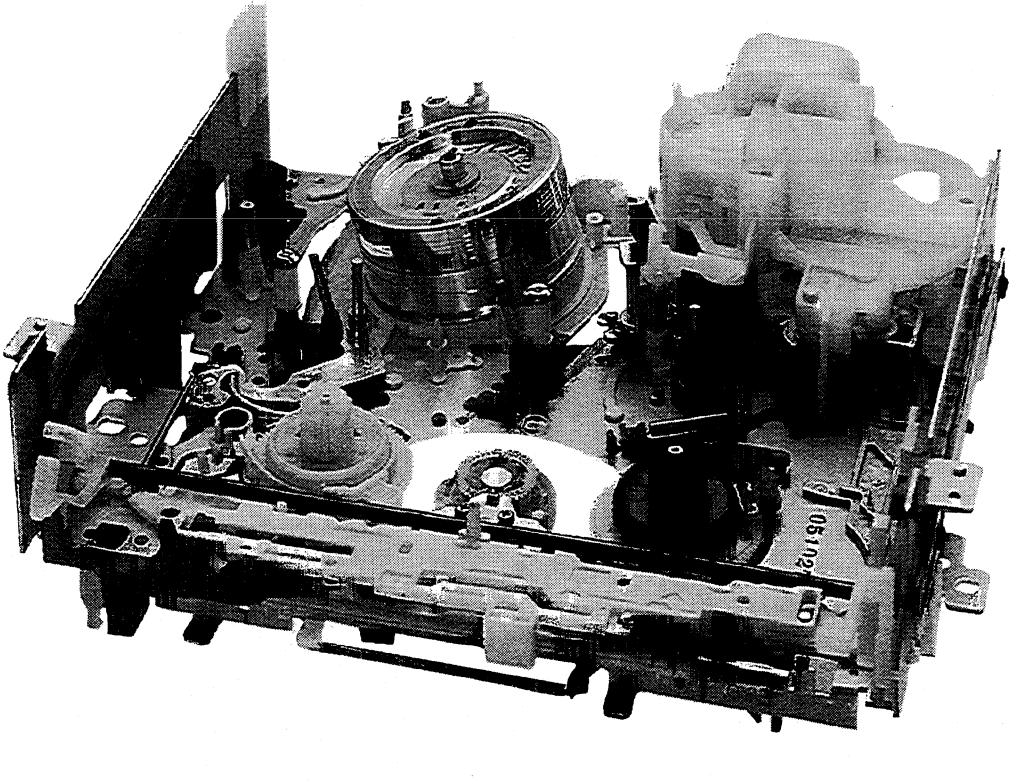
NORDMENDE THOMSON TECHNOLOGY **SABA** **TELEFUNKEN** **THOMSON**

VIDEO

SERVICE MANUAL
DOCUMENTATION TECHNIQUE
TECHNISCHE DOKUMENTATION
DOCUMENTAZIONE TECNICA
DOCUMENTACION TECNICA

R4000

Mechanical adjustment - Disassembly/Assembly
Instruction de réglages mécaniques - Démontage/Remontage
Mechanische Einstellungen - Demontage/Montage
Istruzioni per la manutenzione meccanica - Smontaggio/Rimontaggio
Ajustes mecanicos - Desmontar/Volver a montar



WARNING : *Before servicing this chassis read the safety recommendations.*
ATTENTION : *Avant toute intervention sur ce châssis, lire les recommandations de sécurité.*
ACHTUNG : *Vor jedem Eingriff auf diesem Chassis, die Sicherheitsvorschriften lesen.*
ATTENZIONE : *Prima di intervenire sullo chassis, leggere le norme di sicurezza.*
IMPORTANTE : *Antes de cualquier intervención, leer las recomendaciones de seguridad.*

Code : 102.859.90 - 1094

Geräteliste auf Seite 2 / List of sets on page 2

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Deutschland

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4404 SENSAR		4 + 2 (LP)	PAL / NTSC	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5021		2		1
VR 5025		2		1
VR 5035		3		1
VR 5040		4		1
VR 5045		4		1
M 9415	TELEFUNKEN	2	PAL(MESECAM)	1
M 9420		2	PAL(MESECAM)	1
M 9423		2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2

Export

MODELLE	*MARKE*	*KOEPFE*	*TYPE*	*KATEGORIE*
V 1140 IMC	NORDMENDE	2	PAL(MESECAM)	1
V 1242 SV		2 (LP)	PAL(MESECAM)	1
V 1440 IMC		4 (LP)	PAL(MESECAM)	1
V 1444 SV		4 (LP)	PAL(MESECAM)	1
V 3445 SV		4 + 2 (LP)	PAL(MESECAM)	2
V 4445 SV		4 + 2 + 1 (LP)	PAL / NTSC	2
VR 5020	SABA	2	PAL(MESECAM)	1
VR 5025		2	PAL(MESECAM)	1
VR 5035		3	PAL(MESECAM)	1
VR 5040		4	PAL(MESECAM)	1
M 9420	TELEFUNKEN	2	PAL(MESECAM)	1
M 9425		2 (LP)	PAL(MESECAM)	1
M 9430		3	PAL(MESECAM)	1
M 9443		4	PAL(MESECAM)/SECAM	1
M 9445		4 (LP)	PAL(MESECAM)	1
M 9460		4 + 2 (LP)	PAL(MESECAM)	2
M 9470		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
V 1400	THOMSON	2	PAL(MESECAM)/SECAM	1
VP 2400		2	PAL(MESECAM)/SECAM	1
VP 4480		4 (LP)	PAL(MESECAM)/SECAM	1
VPH 6400		4 + 2	PAL(MESECAM)/SECAM	2
VPH 6480		4 + 2 (LP)	PAL(MESECAM)/SECAM	2
VPH 6490		4 + 2	PAL / SECAM / NTSC	2

INHALT
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I - ALLGEMEINES

Dieses Laufwerk entspricht dem VHS-Standard und wird mit 3 Motoren betrieben:
Kopftrommel-, Capstan- (Direktantrieb) und Funktionssteuermotor (zum Antrieb der Wickelteller und der Funktionssteuernocke). Das neue Laufwerk zeichnet sich durch einen Kopftrommelmotor aus, dessen Stator auf der Hauptplatine integriert ist.

II - BESCHREIBUNG DES LAUFWERKS

Liste der wichtigsten Teile:

Abb. 1:
1 - Andruckrolle
2 - Bandführung
6 - Ton- / Kontrollkopf
10 - Trommelantriebseinheit
11 - Löschkopf
13 - Antistatikbürste
Abb. 2:
15 - Bewegliche Bandführung
20 - Funktionsteuermotor
22 - Steuernocke
28 - Antriebsrollenachse
29 - Wickelteller-Antriebsriemen
33 - Zwischenrolleneinheit
42 - Aufnahmesperre
43 - Abwickelteller
44 - Aufwickelteller
47 - Bandzugarm

I - GENERAL

This mechanism complies fully with the VHS standard. It comprises of three motors; drum and capstan, which are both direct drive and a function control driving the function cam mechanism. This mechanism can be identified by the construction of the drum motor, the stator winding are attached to the main board.

II - INTRODUCTION TO THE MECHANISM

List of the main parts :

Fig. 1 :
1 - Pinch roller assembly
2 - Tape guide
6 - Audio / CTL Head
10 - Drum motor assembly
11 - Full Erase head
13 - Anti-static brush
Fig. 2 :
15 - Mobile tape guide
20 - Function control motor
22 - Drive cam
28 - Capstan motor
29 - Reel drive belt
33 - Intermediate pulley
42 - Recording safety lock
43 - Supply reel hub
44 - Take-up reel hub
47 - Tape back tension arm

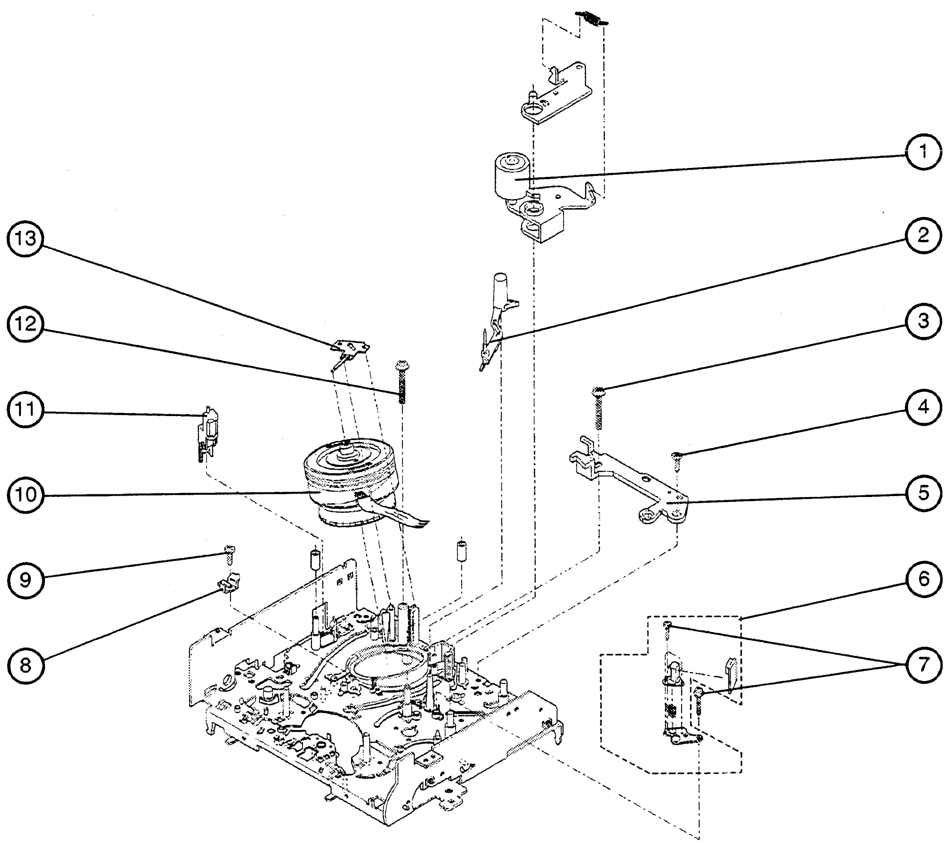


fig. 1

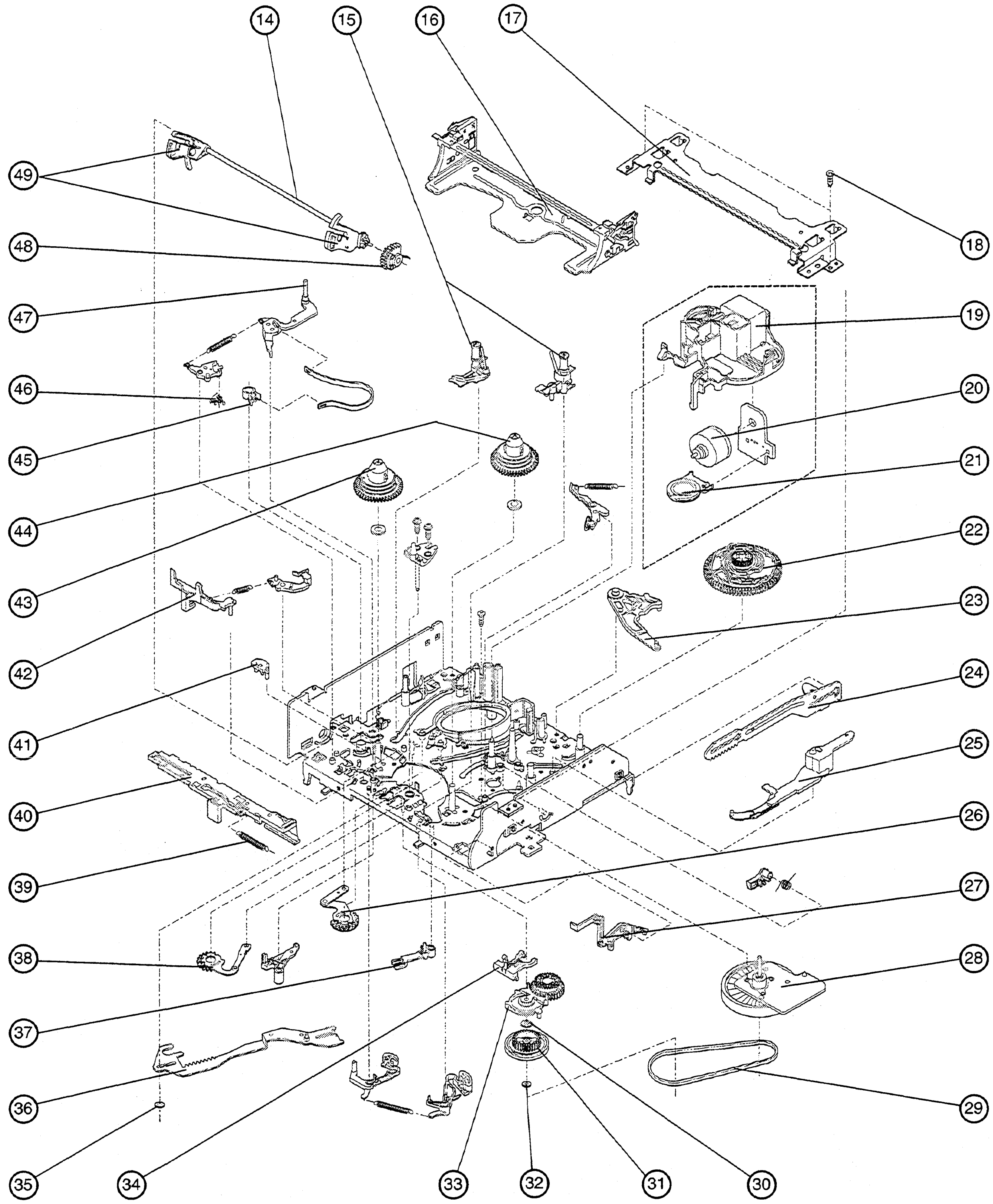


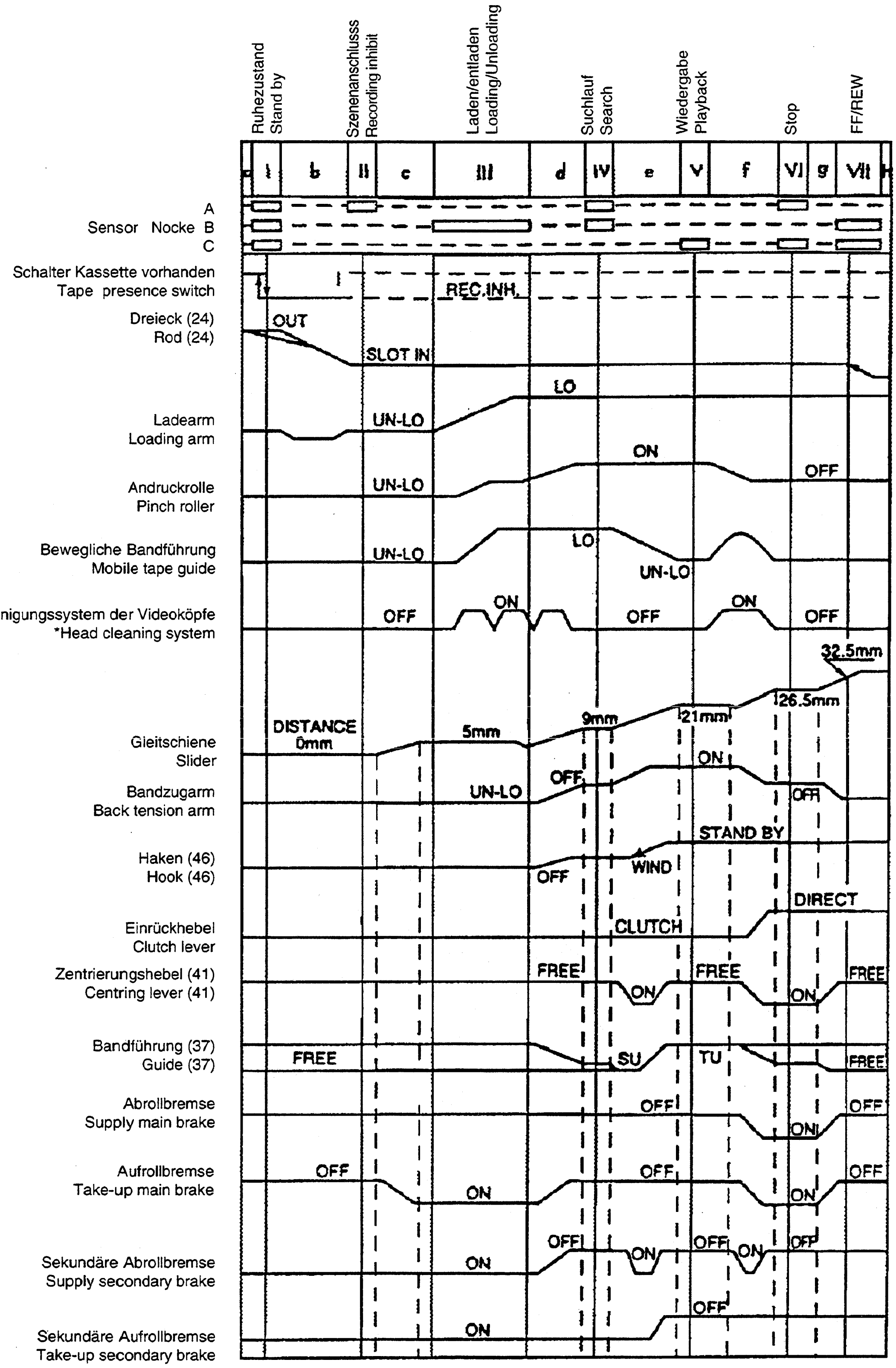
fig. 2

III - FUNKTIONSBESCHREIBUNG

III - DESCRIPTION OF THE OPERATION

1 - KONTROLLE DER FUNKTIONSABLÄUFE

1 - CHECKING FUNCTION SEQUENCE


Ruhezustand
Stand by
Szenenanschlusss
Recording inhibit
Laden/entladen
Loading/Unloading
Suchlauf
Search
Wiedergabe
Playback
Stop
FF/REW
a
I
b
II
c
III
d
IV
e
V
f
VI
g
VII
H
A
Sensor Nocke B
C
Schalter Kassette vorhanden
Tape presence switch
REC.INH.
Dreieck (24)
Rod (24)
OUT
SLOT IN
Ladearm
Loading arm
UN-LO
LO
Andruckrolle
Pinch roller
UN-LO
ON
OFF
Bewegliche Bandführung
Mobile tape guide
UN-LO
LO
UN-LO
*Reinigungssystem der Videoköpfe
*Head cleaning system
OFF
ON
OFF
ON
OFF
Gleitschiene
Slider
DISTANCE 0mm
5mm
9mm
21mm
26.5mm
32.5mm
Bandzugarm
Back tension arm
UN-LO
OFF
ON
OFF
Haken (46)
Hook (46)
OFF
WIND
STAND BY
Einrückhebel
Clutch lever
CLUTCH
DIRECT
Zentrierungshebel (41)
Centring lever (41)
FREE
ON
FREE
ON
FREE
Bandführung (37)
Guide (37)
FREE
SU
TU
FREE
Abrollbremse
Supply main brake
OFF
ON
OFF
Aufrollbremse
Take-up main brake
OFF
ON
OFF
ON
OFF
Sekundäre Abrollbremse
Supply secondary brake
ON
OFF
ON
OFF
ON
OFF
Sekundäre Aufrollbremse
Take-up secondary brake
ON
OFF

*- If fitted

IV- WARTUNG DES LAUFWERKS

⚠Module nicht bei eingeschaltetem Gerät entfernen ! Servicearbeiten am Netzteil nur unter Verwendung eines Regeltrenntrafos durchführen.

1 - ZUGANG ZUM LAUFWERK

1) ABNEHMEN DES GEHÄUSES *(Abb. 3)*

- 3 Schrauben an der Rückseite des Gehäuses und, falls vorhanden, die zwei seitlichen Schrauben entfernen.
- Das Gehäuseoberteil leicht nach hinten ziehen und abheben.
- Die zwei Schrauben, mit denen die Frontblende befestigt ist, links und rechts am Kassettenschacht entfernen.
- 6 Clips (4 an der Oberseite und 2 an der Unterseite) anheben und die Frontblende abnehmen
- Die 2 Schrauben (S1), mit denen das Netzteil befestigt ist, entfernen. Das Netzteil herausnehmen.
- Verbindungsleitungen zur Frontplatine lösen.
- Die 6 Clips (I1), die die Hauptplatine halten, lösen und die Einheit Laufwerk/Platine herausheben.

2) AUSBAUEN DES LAUFWERKS *(Abb. 3, 4)*

- Verbindungsleitungen zu Funktionskontroll- und Kopftrommel-Motor sowie zum Ton-/ Kontrollkopf lösen.
- Schraube (S2) und Antriebsriemen vom Capstanmotor (29) entfernen.
- Schraube (12) an der Antistatikbürste entfernen.
- Schraube (9) und Metallstück (8) entfernen.
- Die 4 Halteclips (I2) lösen und die Laufwerkseinheit anheben; dabei auf die Anschlüsse des Löschkopfs und des Capstanmotors achten.

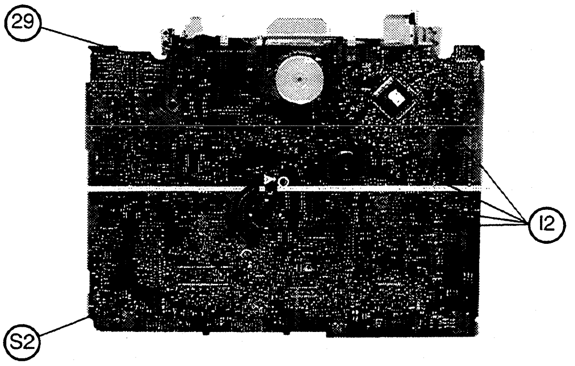


fig. 4

3) AUSBAUEN UND WIEDEREINBAUEN DER KASSETTENHALTERUNG *(Abb. 3 bis 5b)*

AUSBAUEN: *(Abb. 3 und 4)*

- 2 Schrauben links und rechts am Kassettenschacht lösen.
- Den oberen Teil des Kassettenschachtes abheben.
- Den Kassettenhalter bis zum vorderen Anschlag zurückziehen.
- Die zur Kopftrommel zeigende Seite des Kassettenhalters leicht anheben.
- Die weißen Hebel links und rechts am Kassettenhalter entriegeln und den Kassettenhalter in Richtung Kopftrommel schieben, bis die hinteren Führungszapfen aus ihrer Führung genommen werden können
- Jetzt den Kassettenhalter wieder in die entgegengesetzte Richtung ziehen, bis auch die vorderen Führungszapfen aus der Führung genommen werden können.

IV- MECHANISM MAINTENANCE

⚠ Do not disconnect modules when they are energized! Repairs on power supply section are to be carried out only with isolating transformer.

1 - ACCESS TO MECHANISM

1) REMOVAL OF THE CHASSIS *(fig. 3)*

- Remove 3 screws at the rear of the cover and the two side screws.
- Pull the cover slightly backwards and lift it off.
- Remove 2 screws and release 6 clips (4 on the top and 2 on the bottom) securing the front panel.
- Remove 2 screws (S1) securing the power supply unit.
- Carefully remove the power supply unit.
- Unclip the front panel.
- Release 6 clips (I1) securing the main board and lift the mechanism/board assembly out.

2) REMOVAL OF THE MECHANISM *(fig. 3 and 4)*

- Disconnect the function control and drum motors and the audio control head leads.
- Remove screw (S2) and the capstan motor belt (29).
- Remove screw (12) securing the anti-static brush.
- Remove screw (9) and the metal part (8).
- Release the 4 securing clips (I2) and lift the assembly paying attention to the connectors of the full erase head and of the capstan motor.

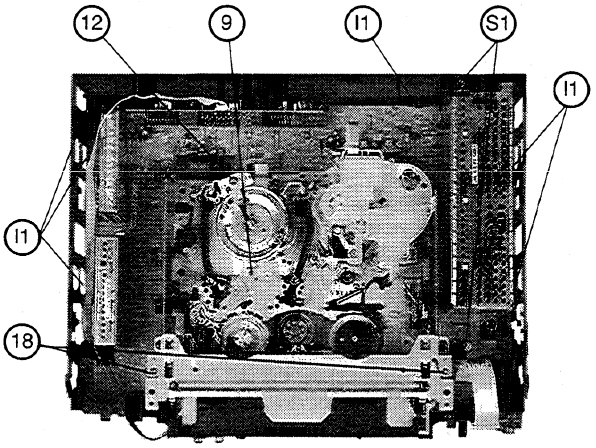


fig. 3

3) REMOVAL AND REFITTING OF THE CASSETTE HOLDER *(fig. 3 to 5b)*

REMOVAL: *(fig. 3 and 4)*

- Take out two screws at the left and the right side of the upper part of the cassette holder.
- Remove the upper part of the cassette holder.
- Pull the remaining part to the upper end position. (Eject position)
- Lift the cassette holder at the side, which shows to the drum
- Release the white levers (left and right of the casstte holder) and push the cassette holder towards the drum until the guide pins at the rear side come out of the guide rails.
- Now pull the cassette holder in the opposite direction until the guide pins at the front side also come out of the guide rails.

WIEDEREINBAUEN:*(Abb. 5a, 5b, 5c und 7)*

- Die vorderen Ansätze des Kassettenträgers wie in Abb. 5a dargestellt einsetzen.
- Die hinteren Ansätze (P1) des Kassettenträgers in Richtung des Trommelmotors kippen.
- Die Hebel (P2) nach oben halten und dabei leicht den Kassettenträgers nach hinten drücken, um so die Ansätze (P3) in die Gleitschienen einzusetzen.
- Den Hebel der Kassettenträgerklappe (27) einsetzen, Abb. 7.
- Die Hebel (P2) wie in Abb.5b dargestellt positioneren, bevor der obere Teil wieder aufgesetzt wird (Abb.5c).

REFITTING:*(fig. 5a , 5b,5c and 7)*

- Move the pins at the front of the cassette holder as shown in figure 5a.
- Move the pins at the back of the cassette holder towards the drum motor.
- Whilst holding the levers , gently push the cassette holder back, so that the back pins go into runners .
- Position the lever of the cassette holder door as shown in figure 7.
- Position the levers as shown in figure 5b before fitting the top unit (figure 5c).

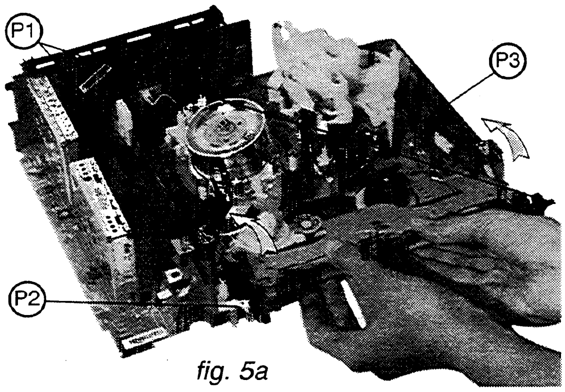


fig. 5a

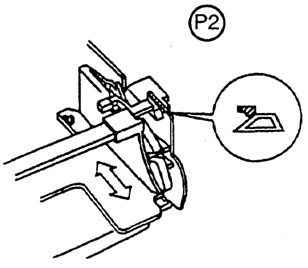


fig. 5b

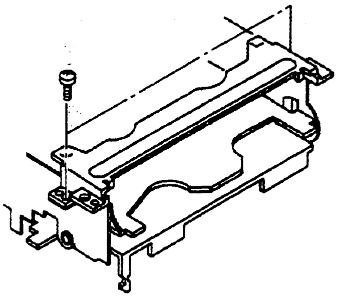


fig. 5c

2 - AUSTAUSCHEN DER WICHTIGSTEN LAUFWERKTEILE

1) AUSTAUSCH DER TROMMELANTRIEBSEINHEIT:

(Abb. 6)

AUSBAUEN:

- Um die Trommelantriebseinheit auszubauen, ist es nicht nötig, das Laufwerk herauszunehmen.
- Den Trommelantrieb abtrennen.
- Schraube (12) und Antistatikbürste entfernen.
- Die Schrauben (3), (4) und (9) sowie die Metallteile entfernen.
- Das Reinigungssystem der Videoköpfe ausbauen.
- Die Trommelantriebseinheit herausnehmen.

WIEDEREINBAUEN:

- In umgekehrter Reihenfolge zum Ausbau vorgehen und dabei vor dem Befestigen von Teil (5) die Trommel leicht gegen den Abwickelteller drücken.
- Den Bandlauf überprüfen.

2 - REPLACEMENT OF THE MAIN PARTS ON THE MECHANISM.

1) REPLACEMENT OF THE DRUM MOTOR:

(fig. 6)

REMOVAL:

- It is not necessary to remove the mechanism, in order to remove the drum motor.
- Disconnect the drum motor.
- Remove screw (12) and the anti-static brush.
- Remove screws (3), (4) and (9) and metal parts.
- Remove video head cleaning system.
- Remove the drum motor.

REFITTING:

- Perform removal operations in reverse order by pushing the drum slightly towards the supply reel before securing the part (5).
- Check the tape path.

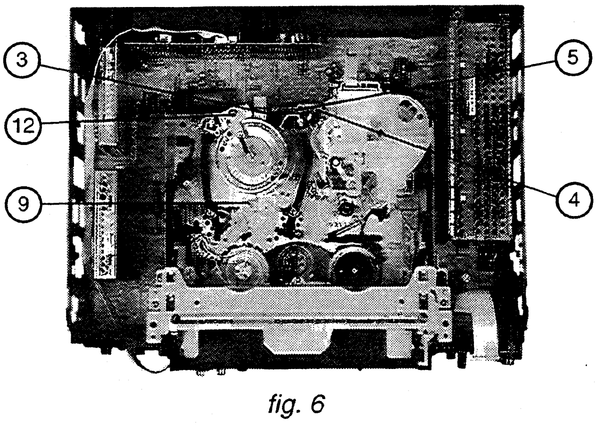


fig. 6

2) AUSTAUSCH DES BANDZUGARMS:
(Abb. 7 und 8)

AUSBAUEN:
- Den Clip (I3) öffnen und den gezahnten Hebel (48) herausziehen.
- Den Hebel (27) entfernen.
- Die Antriebsachse (14) der Kassettenhalterung nach rechts schieben, um sie aus ihrem Sitz zu nehmen.
- Die Achse erst links, dann rechts anheben.
- Die Feder (39) lösen.
- Den Clip (I4) lösen und den Bandzugarm und die Bremse anheben.
- Den Clip (I5) öffnen, um die Befestigung (45) der Bandzugbremse zu lösen.

2) REPLACEMENT OF THE TAPE BACK TENSION ARM
(fig. 7 and 8)

REMOVAL:
- Release clip (I3) and remove the toothed lever (48).
- Remove lever (27).
- Slide the cassette holder pin (14) to the right in order to release it from its housing.
- Lift the pin from the left and then from the right.
- Remove spring (39).
- Release clip (I4) and lift the tape back tension arm and brake.
- Release clip (I5) in order to free the attachment (45) of the tape back tension brake.

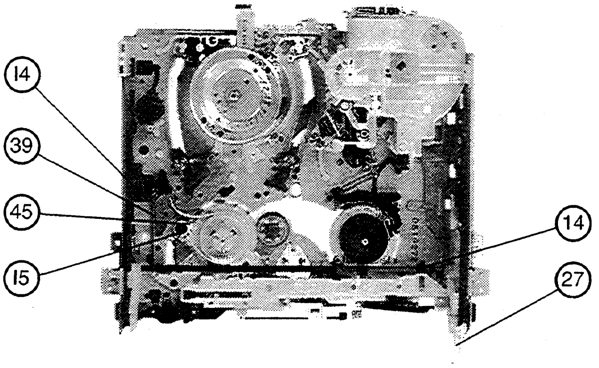


fig. 7

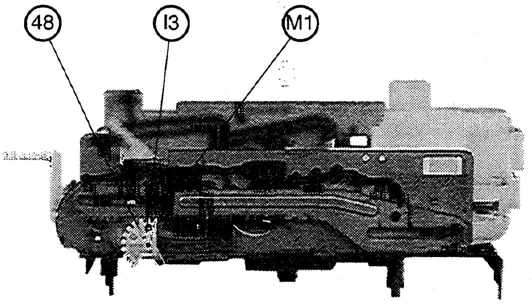


fig. 8

WIEDEREINBAUEN:
- Die Befestigung (45) der Bandzugbremse anbringen.
- Die Bremse um den Abwickelteller legen.
- Den Bandzugarm einsetzen und andrücken, um ihn festzuklemmen.
- Die Feder (39) wieder anbringen.
- Die Achse (14) in ihren Sitz einsetzen.
- Den gezahnten Hebel (48) einsetzen und dabei den ersten Zahn mit dem Kennzeichen (M1) ausrichten.
- Nach dem Austausch des Bandzugarms muß dessen Position gemäß der Angaben auf Seite 13 neu eingestellt werden.

REFITTING:
- Fit attachment (45) of the tape back tension brake.
- Wind the brake around the supply reel.
- Insert the tape tension arm and press to clip in to position.
- Refit spring (39).
- Refit pin (14) in its housing.
- Fit the toothed part (48) by aligning the first tooth with the marking (M1).
- After replacing the tape back tension arm, its position must be re-set as shown in page 13.

3) AUSTAUSCH VON TON-UND KONTROLLKOPF:
(Abb.9)

AUSBAUEN:
- Den Stecker (C1) herausziehen.
- Die 2 Schrauben (7) entfernen und dann die Kontrollkopfeinheit anheben.

3) REPLACEMENT OF THE AUDIO-CONTROL HEAD.
(fig. 9)

REMOVAL:
- Disconnect connector (C1).
- Remove 2 screws (7) and lift the audio-control head.

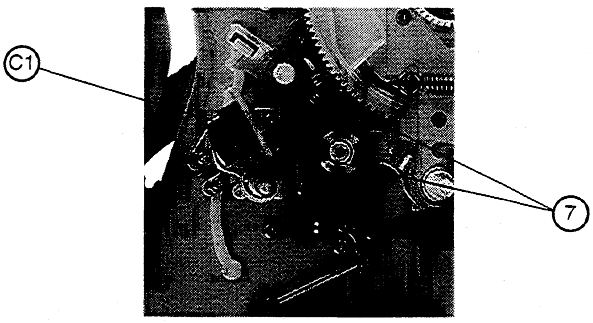


fig. 9

WIEDEREINBAUEN:

- In umgekehrter Reihenfolge zum Ausbau vorgehen.
- Folgende Einstellungen vornehmen: Azimut, Höhe, Neigungswinkel und Kompatibilität (siehe Seite 15, Abschnitt B).

4) AUSTAUSCHEN DES FUNKTIONSKONTROLLMOTORS:

(Abb. 10 und 11)

AUSBAUEN:

- Das Reinigungssystem der Videoköpfe ausbauen.
- In der angegebenen Reihenfolge die 4 Clips (I6), (I7), (I8) und (I9) lösen. Dann die Einheit Gehäuse /Funktionskontrollmotor anheben.
- Das Teil (P4) nach vorherigem Öffnen des entsprechenden Clips anheben.
- Das Getriebe (P5) herausnehmen.
- Das Ende der Gewindestange (P6) leicht anheben.
- Den Clip (I10) des Funktionsschalters lösen.
- Die Einheit Motor/Schalter aus der Gleitschiene (P7) nehmen.
- Den Motor ablöten.

WIEDEREINBAUEN:

- Darauf achten, daß das Loch (H1) der Nocke über dem des Gehäuses liegt.
- In umgekehrter Reihenfolge zum Ausbau vorgehen, ohne dabei zu vergessen, die Gewindestange in ihre Clips einzusetzen und darauf zu achten, daß die Kennzeichen (M2) des Funktionsschalters und (M3) des Gehäuses übereinstimmen.

REFITTING:

- Perform the removal operations in reverse order.
- Adjust the azimuth, height, inclination and check compatibility (see page 15 section B).

4) REPLACEMENT OF THE FUNCTION CONTROL MOTOR:

(fig. 10 and 11)

REMOVAL:

- Remove the video head cleaning system.
- Release, in this order, 4 clips (I6), (I7), (I8) and (I9) securing the casing and function control motor assembly and lift it.
- Lift part (P4) after releasing its clip.
- Remove gear (P5).
- Slightly lift the end of the worm screw (P6).
- Release clip (I10) of the function switch.
- Remove the motor/switch assembly from the slide rail (P7).
- Unsolder the motor connections.

REFITTING:

- Check that hole (H1) on the cam is exactly over the hole on the chassis.
- Perform removal operations in reverse order remembering to insert the worm screw in its clips and making sure that the markings (M2) on the function switch correspond to the markings (M3) on the casing.

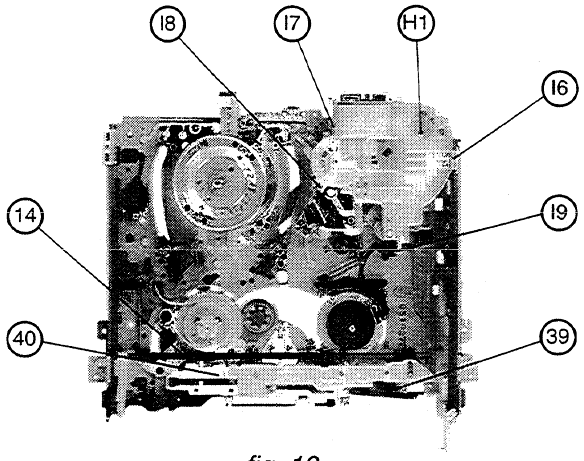


fig. 10

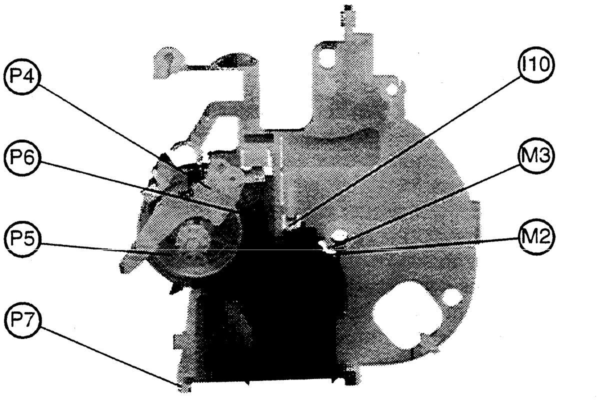


fig. 11

5) AUSTAUSCH DER FUNKTIONSSTEUERNOCKE:

(Abb. 10, 12, 13 und 14)

AUSBAU:

- Die Einheit Gehäuse/Funktionskontrollmotor gemäß den Angaben des vorherigen Kapitels ausbauen.
- Die Antriebsachse (14) der Kassettenhalterung ausbauen.
- Die Feder (39) und die Gleitschiene (40) entfernen.
- Die Andruckrolle (1) und den Hebel (25) entfernen.
- Die Nocke herausnehmen.

5) REPLACEMENT OF THE CONTROL CAM:

(fig. 10, 12, 13 and 14)

REMOVAL:

- Remove the casing and function control motor assembly as discribed in the previous section 4.
- Remove cassette holder drive pin (14) .
- Remove spring (39) and the slide rail (40).
- Remove pinch roller (1) and the lever (25).
- Remove the cam.

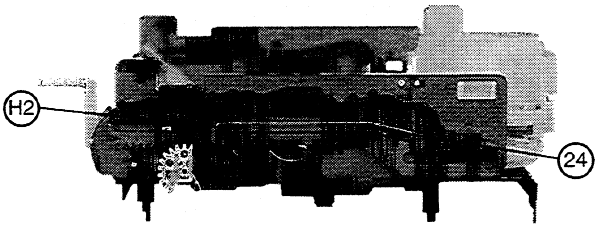


fig. 12

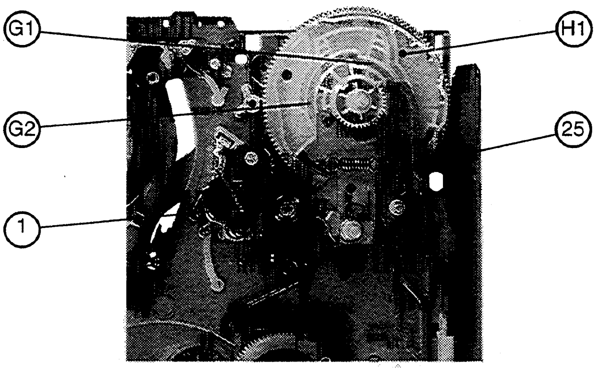


fig. 13

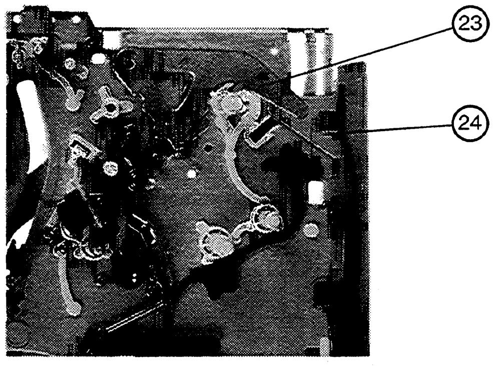


fig. 14

WIEDEREINBAUEN:

- Die beweglichen Bandführungen und den Bandzugarm am Anschlag "Ausgabe" festhalten.
- Den Hebel (23) montieren und dabei sorgfältig seinen Zapfen in das Loch des Dreiecks (24) einführen.
- Das Dreieck (24) so positionieren, daß das Loch (H2) über dem des Gehäuses liegt.
- Die Nocke so positionieren, daß das Loch (H1) über dem des Gehäuses liegt.
- Den Hebel (25) einsetzen und dabei seinen Zapfen in die Auskehlung (G1) einführen.
- Die Andruckrolle unter Einführen des Zapfens in die Auskehlung (G2) anbringen und dann die Einheit Gehäuse/Funktionskontrollmotor einsetzen. Dabei ist darauf zu achten, daß das Kennzeichen auf dem Schalter dem des Gehäuses gegenüberliegt.
- Die Gleitschiene (40) einsetzen und die Feder (39) wieder anbringen.

REFITTING

- Hold the mobile guide rails and the tape back tension arm against the unloading stop.
- Fit lever (23) making sure that the nipple is fitted inside the hole on the rod (24).
- Position the rod (24) so that hole (H2) is exactly over the hole on the chassis.
- Position the cam so that hole (H1) is exactly over the hole on the chassis.
- Fit lever (25) by inserting its nipple in the groove (G1).
- Fit the pinch roller by inserting its nipple in the groove (G2) and then fit the casing and function control motor assembly, making sure that the marking on the switch is opposite the marking on the casing.
- Fit slide rail (40) and spring (39).

6) AUSTAUSCH DER LADEARME:

(Abb. 15 und 16)

AUSBAU:

- Den Clip (35) entfernen und den Antriebshebel (36) der Ladearme abnehmen.
- Die Ladearme anheben.

6) REPLACEMENT OF THE TAPE LOADING ARMS

(fig. 15 and 16)

REMOVAL:

- Remove clip (35) and remove the tape loading arm drive lever (36).
- Remove the take-up and supply insertion arms.
- Remove mobile tape guides .

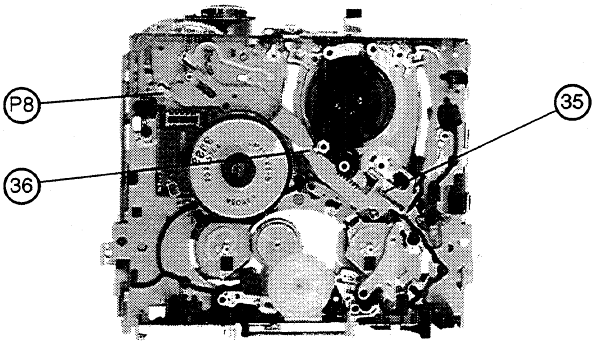


fig. 15

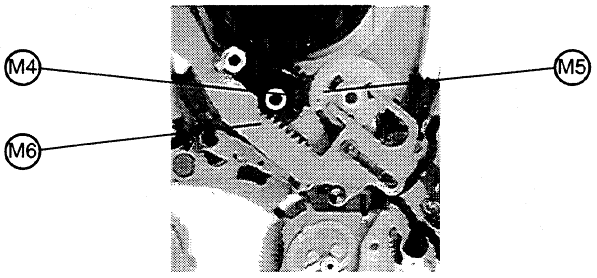


fig. 16

WIEDEREINBAU:

- Die beweglichen Bandführungen am Anschlag "Ausgabe" festhalten.
- Erst den Aufroll- dann den Abroll-Ladearm einbauen, und zwar so, daß sich die Kennzeichen (M4) und (M5) gegenüberliegen.
- Das Ende des Hebels (36) soweit in die Gleitschiene (P8) schieben, bis sich das Kennzeichen (M6) und der erste Zahn des Aufrollgetriebes einander gegenüberliegen.
- Den Clip wieder anbringen.

REFITTING:

- Fit the mobile tape guides and hold against the play position on the main deck.
- Fit the take-up guide insertion arm followed by the supply guide insertion arm making sure that the alignment holes (M4) and (M5) are facing each other.
- Insert the end of the lever (36) in the slide rail (P8) and then slide it until the marking (M6) is facing the first tooth of the take-up gear.
- Refit the clip.

7) AUSTAUSCHEN DES ZWISCHENGETRIEBES:

(Abb. 17, 18 und 19)

AUSBAUEN:

- Die Gleitschiene (40) ausbauen.
- Den Clip (32) und das Getriebe (31) entfernen.
- Den Clip (I11) lösen und die Führung (37) herausnehmen.
- Den Clip (30) entfernen und das Zwischengetriebe (33) anheben.

7) REPLACEMENT OF THE INTERMEDIATE PULLEY:

(fig. 17, 18 and 19)

REMOVAL:

- Remove slide rail (40).
- Remove clip (32) and gear (31).
- Release clip (I11) and remove guide (37).
- Release clip (30) and lift the intermediate pulley (33) off.

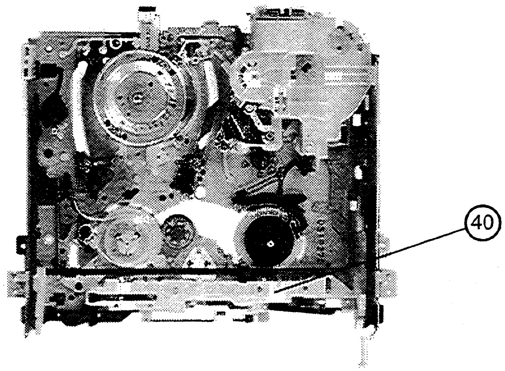


fig. 17

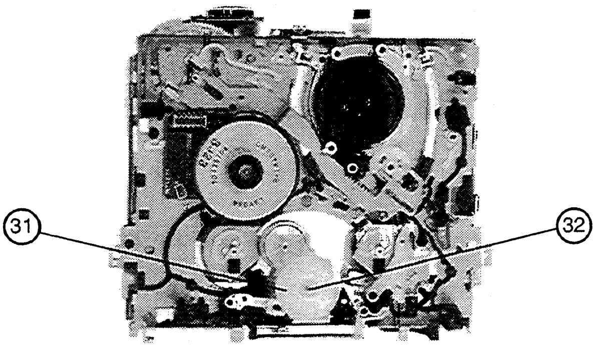


fig. 18

WIEDEREINBAUEN:

- Den Einrückhebel (34) in die Auskehlung des Zwischengetriebes einführen und dann dieses auf seiner Achse positionieren.
- In umgekehrter Reihenfolge zum Ausbau vorgehen.

REFITTING :

- Insert the clutch tab (34) in the groove of the intermediate pulley and fit the latter on its spindle.
- Perform the removal operations in reverse order for the other parts.

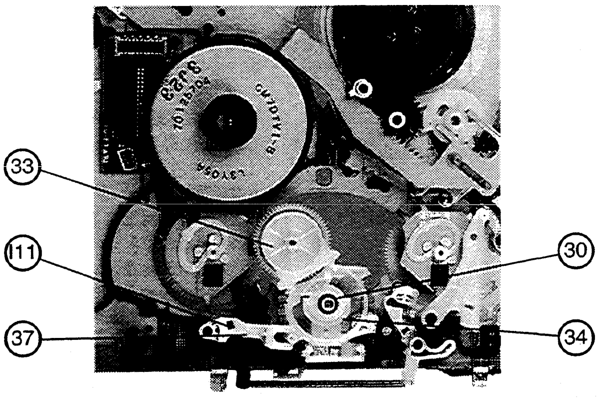


fig. 19

V - MECHANISCHE EINSTELLUNGEN UND KONTROLLEN

ERFORDERLICHES MATERIAL:

- Bandzug-Meß-Kassette.
- Kassette MH4.
- Zweistrahloszilloskop mit Bandbreite >10 MHz.
- Fernsehgerät oder Farbmonitor.

1 - EMPFEHLUNGEN DES HERSTELLERS:

- Nach allen Eingriffen an einem Laufwerk ist es ratsam, die Reinigungs-, Überprüfungs und Einstellarbeiten des Bandlaufs vorzunehmen.

V - ADJUSTMENTS AND MECHANICAL CHECKS

EQUIPMENT REQUIRED:

- Torque measurement cassette .
- MH4 tape.
- One dual-trace oscilloscope, pass band > 10 MHz.
- One colour television set or monitor.

1 - MANUFACTURER RECOMMENDATIONS:

- Before any work is carried out on the mechanism, the tape path should be cleaned, checked and adjusted.
- Check that the mobile tape guides rotate freely.

- Stellen Sie sicher, daß sich die beweglichen Bandführungen frei drehen.
- Nach dem Einlegen der Kassette prüfen, ob sich die beweglichen Bandführungen in ihren Endpositionen befinden.
- Prüfen, ob die Capstanachse und die Andruckrolle parallel zueinander stehen.
- Mit einem Tupfer alle Partien reinigen, die sich in direktem Kontakt zum Band befinden.
- Zur Reinigung der Kopftrommel, der Videoköpfe und des Drehtransformators wird empfohlen, Baumwollhandschuhe zu tragen, um Fettablagerungen auf den Flächen zu verhindern, die mit dem Band in Berührung kommen.

- After insertion, check that the mobile tape guides are correctly positioned in their stops.
- Check that the capstan shaft and the pinch roller are parallel.
- Using a pad, clean all the parts directly in contact with the tape.
- To clean the video head drum , it is recommended to wear cotton gloves and use a pad so that there are no grease marks left on the surfaces in contact with the tape.

2 - EINSTELLEN DER BANDZUGBREMSE:

(Abb. 20)

- Die Kassettenhalterung ausbauen.
- Den Videorecorder auf Wiedergabe schalten.
- Mit einem Schraubendreher die Schraube (S3) soweit festdrehen, bis sich der BANDZUG-Fühlhebel 7,5 ± 1mm vom Gehäuserand entfernt befindet (durch den langen Strich (M7) gekennzeichnet).
- Den Bandzug wie nachstehend angegeben überprüfen.

2 - TAPE BACK TENSION BRAKE ADJUSTMENT

(fig. 20)

- Remove the cassette holder.
- Set mechanism in playback mode.
- Using a screwdriver turn screw (S3) so that the arm tension pin is 7.5 ± 1 mm from the edge of the chassis (marked by the long line (M7)).
- Check the tape tension as shown below.

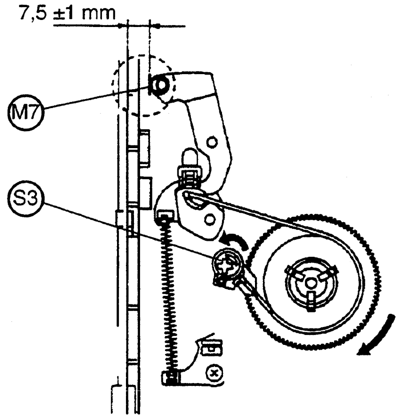


fig. 20

3 - ÜBERPRÜFUNG DES BANDZUGS UND DES WICKELTELLER-DREHMOMENTES:

BANDZUG :

- Die Bandzug-Meßkassette abspielen.
- Der Bandzug auf dem Abwickelteller muß zwischen **45** und **95** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

WICKELTELLER-DREHMOMENT :

- Das Drehmoment des Aufwickeltellers muß zwischen **125** und **200** g/cm betragen.
- Wenn der Bandzug nicht in diesem Bereich liegt, die Wickelteller-Kopplungseinheit austauschen.

3 - CHECKING THE BACK TAPE TENSION AND THE SUPPLY REEL TORQUE:

TAPE TENSION:

- Use the torque measurement cassette in the Playback mode.
- The tension on the tape on the reel must be between **45** and **95** gr/cm.
- If the tension lies outside these values, replace the clutch assembly.

REEL TAKE-UP TORQUE:

- The torque on the take-up reel must be between **125** and **200** gr/cm.
- If this is not the case, replace the take-up reel drive clutch assembly.

4 - STATIK-EINSTELLUNGEN AM BANDLAUF:

(Abb. 21)

VORSICHTSMASSNAHMEN:

Der Bandlauf wurde im Werk präzise eingestellt, er braucht also nicht nachgestellt werden. Dennoch können Verschleißerscheinungen oder ein Defekt des Gerätes, der

4 - STATIC ADJUSTMENTS OF THE TAPE PATH: *(fig. 21)*

PRECAUTIONS:

The video tape path is precisely aligned at the factory and breakdown may require the replacement of parts and necessitate the adjustment of the tape path. **For this**

das Auswechseln eines sich auf dem Bandlauf befindlichen Teiles erforderlich macht, dazu führen, daß der Bandlauf neu eingestellt werden muß. **Wir empfehlen, für diesen Arbeitsgang keine Abgleich-Kassette zu verwenden.** Schalten Sie das Gerät auf Wiedergabe und ziehen Sie nach erfolgtem Einfädeln den Netzstecker. Überprüfen Sie die richtige Bandlage in der Mechanik: das Band muß den Bandzugpin, den Löschkopf, die beweglichen Bandführungen, die Ton-/Kontrollkopfeinheit, die Videokopftrommel und die festen Aufrollbandführungen berühren.

operation, it is recommended that the alignment test tape is not used. Load a normal video cassette, select the PLAYBACK mode and allow the tape to fully load, switch OFF the power . Check that the tape is correctly loaded around the mechanism, the tape must be in contact with the following items, back tension pole, the full erase head, tape guides, video head drum and audio-control head.

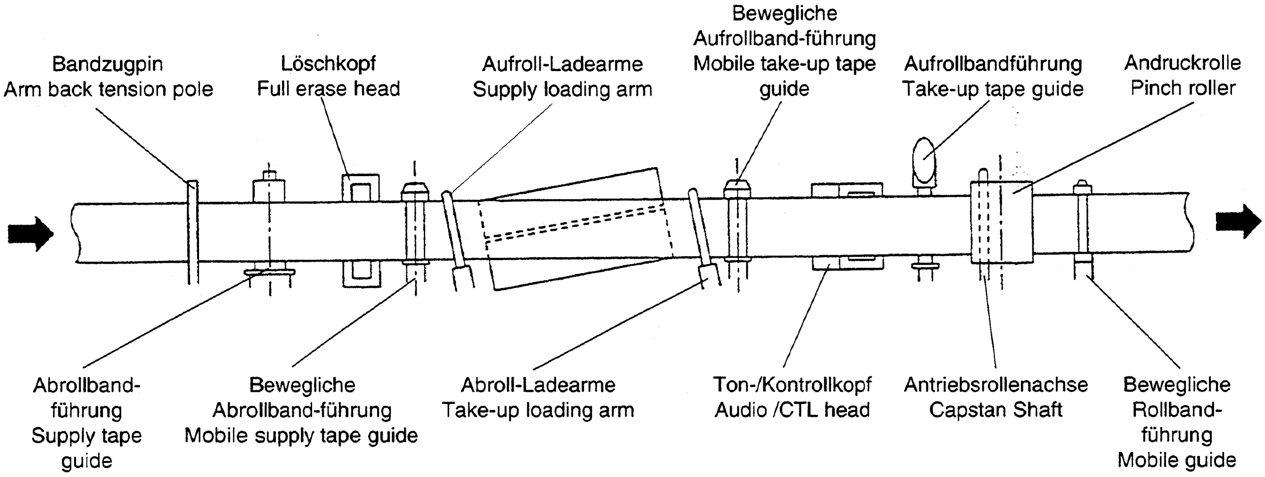

Bandzugpin
Arm back tension pole
Löschkopf
Full erase head
Aufroll-Ladearme
Supply loading arm
Bewegliche
Aufrollband-führung
Mobile take-up tape
guide
Aufrollbandführung
Take-up tape guide
Andruckrolle
Pinch roller
Abrollband-
führung
Supply tape
guide
Bewegliche
Abrollband-führung
Mobile supply tape guide
Abroll-Ladearme
Take-up loading arm
Ton-/Kontrollkopf
Audio /CTL head
Antriebsrollenachse
Capstan Shaft
Bewegliche
Rollband-
führung
Mobile guide

fig. 21

VOREINSTELLUNG DER BEWEGLICHEN BANDFÜHRUNGEN:
Wenn das Band an einer der Bandführungen nicht glatt anliegt, diese so einstellen, bis das Band glatt anliegt.

VOREINSTELLUNG DES TON-/KONTROLLKOPFES:
(Abb. 22)
Wenn das Band an der festen Aufrollbandführung nicht glatt anliegt, den Neigungswinkel (I) der Ton-/Kontrollkopfeinheit nachstellen.

MOBILE TAPE GUIDE PRE-SETTING:
If there is tape folding on one of the mobile tape guide, adjust the position of the guide for correct alignment.

AUDIO CONTROL HEAD PRE-SETTING:
(fig. 22)
If the tape folds on the take-up tape guide, adjust the inclination (I) of the audio control head.

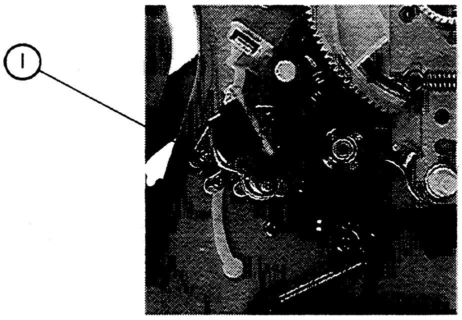


fig. 22

5 - DYNAMIK-EINSTELLUNGEN AM BANDLAUF:

Für diese Dynamik-Einstellungen:
- Die Kassettenhalterung ausbauen.
- Die Grauabstufungen der Referenzkassette ablesen.
- Auf einem Zweistrahl-Oszilloskop (mit Drum Flip Flop (BT002) getriggert) das Video-FM-Signal (BV131) sichtbarmachen (Umschalten der Videoköpfe auf Wiedergabe).

5 - DYNAMIC ADJUSTMENTS ON THE TAPE PATH:

For these dynamic adjustments:
- Remove the cassette holder.
- Playback the grey scale section on the alignment tape.
- Display on a dual-trace oscilloscope the FM video signal (BV131) synchronized by the 25 Hz flip-flop (BT002) (switching of the video heads in playback mode).

A - Feineinstellung der beweglichen Bandführungen:

(Abb. 23)

Die optimale Einstellung ist erreicht, wenn die FM-Hüllkurve von Spuranfang bis Spurende eine konstante Amplitude hat. Eine schlechte Einstellung der beweglichen Abrollbandführung zieht entweder ein Rasterflimmern oder einen Rauschbalken im oberen Teil des Bildes nach sich.
Gleichen Sie die bewegliche Abrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spuranfang vermieden wird. Eine schlechte Einstellung der beweglichen Aufrollbandführung zieht Rauschbalken im unteren Teil des Bildes nach sich.
Gleichen Sie die bewegliche Aufrollbandführung so ab, daß jegliche Stauchung der FM-Hüllkurve am Spurende vermieden wird.
Stellen Sie durch Betätigen der Spurlagenfunktion sicher, daß die Amplitude der FM-Hüllkurve von Spuranfang bis Spurende gleichmäßig abnimmt. Falls dies nicht der Fall ist, wiederholen Sie bitte den Abgleich.

A - Fine adjustment of the mobile tape guides:

(fig. 23)

The optimum adjustment is obtained when the amplitude of the FM envelope is constant from the beginning to the end of the track.
If the mobile supply tape guide is incorrectly set, either the frame jumps or there is a noise bar at the top of the screen.
Adjust the mobile supply tape guide to eliminate any constriction of the FM envelope at the beginning of the track.
If the mobile take-up tape guide is incorrectly set, there will be noise bars at the bottom of the screen.
Adjust the mobile take-up tape guide to eliminate any constriction of the FM envelope at the end of the track.
Check, using the tracking control, that the amplitude of the FM envelope decreases in a linear manner from the beginning to the end of the track. If there is pinching of the envelope on the supply or take-up side, re-adjust the corresponding tape guide.

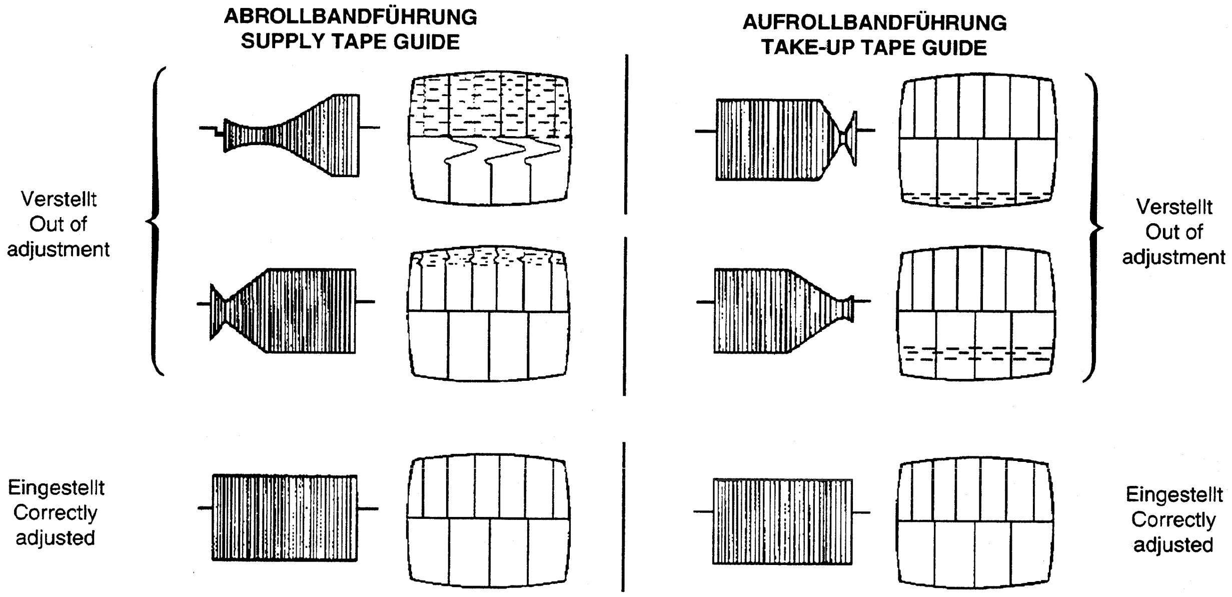


fig. 23

B - Feineinstellung des Ton- / Kontrollkopfes

(ABB. 24 und 25)

Die richtige Einstellung der Lage des Ton- / Kontrollkopfes ist notwendig, um ein korrektes Audio-Ausgangssignal und einen optimalen Rauschabstand zu garantieren.
Ein Abgleichfehler kann außerdem zu einer Instabilität in der Servo-Regelung führen. Besonders wichtig ist diese Einstellung bei Geräten mit Index Suchlauf.
Zur Beobachtung des Audio-Signals wird ein Oszilloskop an den Audio Ausgang angeschlossen.

- Testkassette mit Grautreppe und Audio-Signal (6kHz) abspielen.
- Die Azimut-Schraube (A) nachstellen, bis das Maximum des Audio-Signals am Ausgang erreicht ist.
- Die Höhe des Ton- /Kontrollkopfes mit der Mutter (H) so einstellen, daß das Audio-Signal eine flache Hüllkurve aufweist.
- Die Schrauben (A) und (H) abwechselnd und immer nur wenig (nicht mehr als 45° auf einmal) nachstellen, um einen maximalen Audio-Pegel am Ausgang zu erzielen.

B - Fine adjustment of the audio control head :

(fig. 24 and 25)

The position of the audio control head must be correctly set to ensure that the audio output and the signal /noise ratio are correct.
A misalignment may cause the servo circuits to be unstable. The precision of the adjustment is particularly important for models with index search.
To observe the audio signal, connect an oscilloscope to the AUDIO output.

- Playback the grey scale pattern on video cassette (Audio 6 kHz).
- Adjust the azimuth screw (A) to obtain the maximum output level.
- Adjust the height of the audio control head on the screw (H) so that the envelope of the audio signal is flat.
- Adjust the screws (A) and (H) in alteration and in small steps (45° at a time) to obtain the maximum output level.

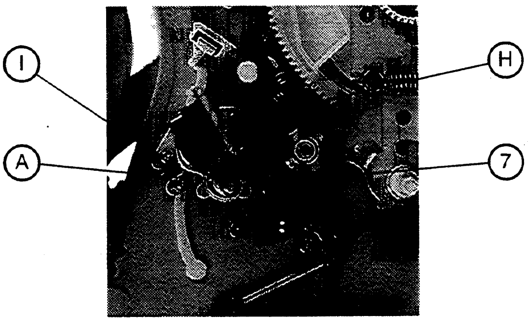


fig. 24

C - Kompatibilitätseinstellung *(Abb. 24)*

Zunächst muß der Videorecorder in sich kompatibel sein. Dazu ein Farbbalken-Testbild aufnehmen und überprüfen, ob die Wiedergabe dieser Aufnahme optimal ist.

- Den Tastkopf eines Oszilloskops an den FM-Ausgang (BV131) anschließen. .
- Spurlagenfunktion aufrufen und durch Drücken der "+"- und "-" Tasten die Spurlage auf Null stellen.
- Das Oszilloskop extern mit dem Kopftrommel-Schaltsignal (Drum Flip Flop) triggern. Die positive Flanke zum Triggern verwenden, um das Signal von Kopf 2 darzustellen.
- FM-Wert für die Grautreppe ablesen.
- Die Schraube (7) lösen.
- Den Ton- / Kontrollkopfes unter Beachtung des Signals auf den Videoköpfen mit einem Kreuzschraubenzieher, der in die Einkerbung gesetzt wird (ohne das Gehäuse zu durchqueren), drehen, um den FM-Pegel auf Maximum zu stellen. Die Schraube (7) sofort wieder anziehen.
- Durch Betätigung der Spurlage-Funktion überprüfen, ob das Maximum des FM-Pegels in der Nullstellung erreicht ist.

VI - ÜBERPRÜFUNG DES LAUFWERKS UND FEHLERSUCHE

1 - ÜBERPRÜFUNG VON MOTOR- UND SENSORSYSTEM

Motor- und Sensorsystem wie in dem Diagramm auf Seite 17 dargestellt auf Fehlfunktionen untersuchen.

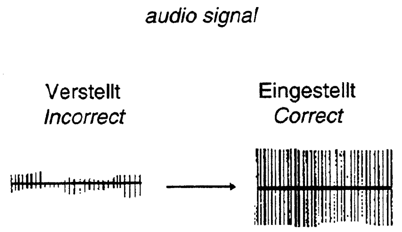


fig. 25

C - Compatibility adjustment *(fig. 24)*

First of all, the video recorder must be made compatible with itself, it is therefore, necessary to record a colour bar test pattern and check that the playback of this recording is optimum.

- Connect the probe of the oscilloscope envelope to the FM output (BV131).
- Enter the tracking mode and select manual tracking.
- Press on the + and - keys and set the track to 0.
- Synchronize the oscilloscope with the head switching flip-flop. Use the positive trigger to display the signal from head 2.
- Playback the grey scale pattern.
- Loosen the screw (7).
- While observing the signal on the video heads, tilt the audio control head,using a Philips screwdriver placed in the notch (so as not to pass through the chassis), in order to obtain the maximum output level. Tighten the screw (7) immeddiately
- Check by pressing the + and - phase keys that the signal is maximum for a track equal to 0.

VI - MECHANICAL DECK TROUBLE SHOOTING AND CHECK METHOD

1 - MOTOR SENSOR SYSTEM CHECK

Check whether any abnormalities are found in the motor or the sensor system as follows in the flow chart on page 17

Der Abstand von ▲ ist zulässig, wenn er innerhalb von 3 mm liegt
The clearance of ▲is allowable if it is within 3 mm

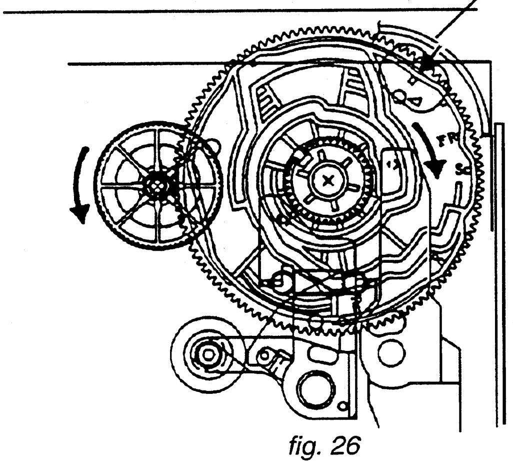
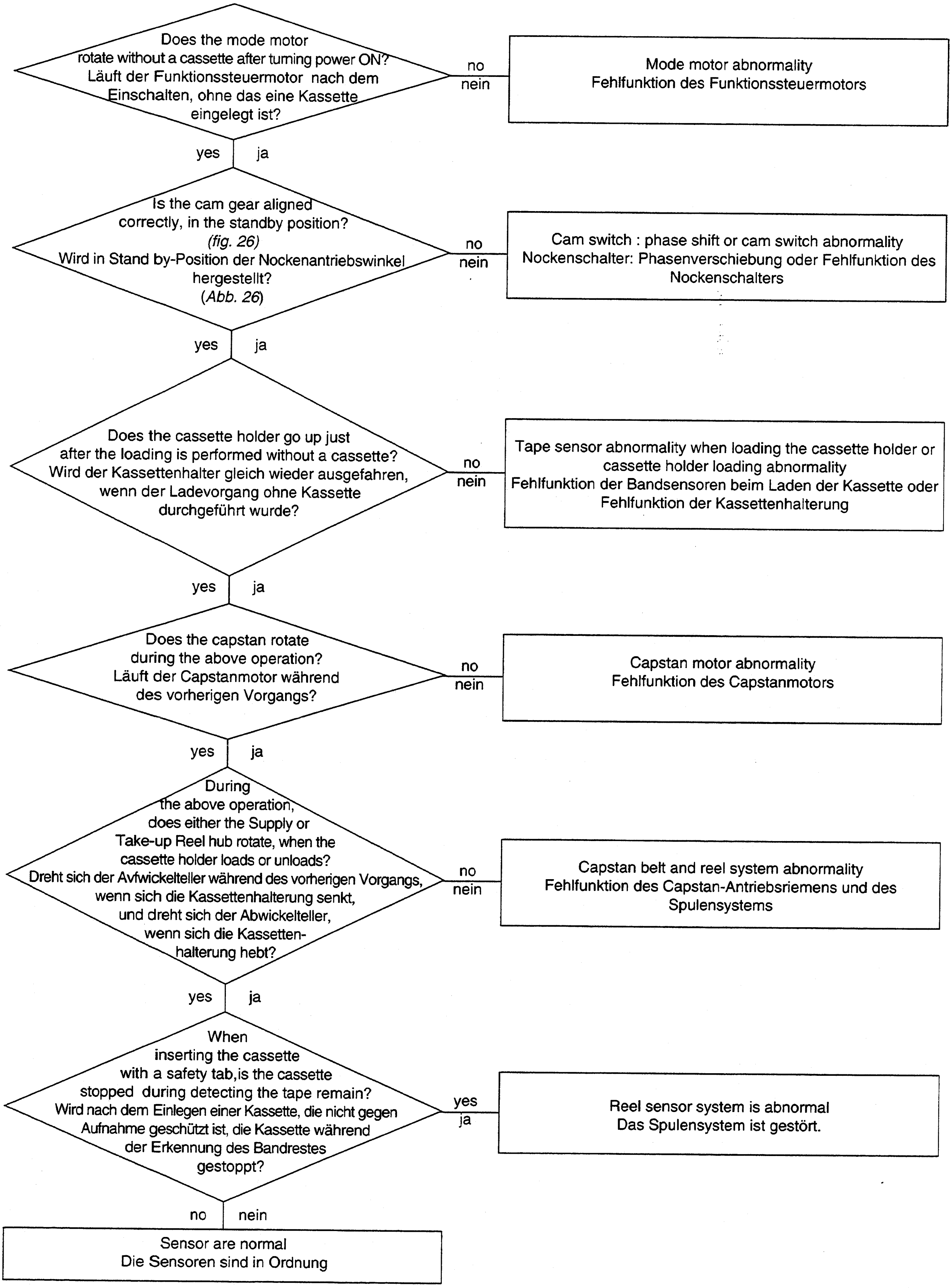


fig. 26


Does the mode motor rotate without a cassette after turning power ON?
Läuft der Funktionssteuermotor nach dem Einschalten, ohne das eine Kassette eingelegt ist?
no
nein
Mode motor abnormality
Fehlfunktion des Funktionssteuermotors
yes
ja
Is the cam gear aligned correctly, in the standby position? (fig. 26)
Wird in Stand by-Position der Nockenantriebswinkel hergestellt? (Abb. 26)
no
nein
Cam switch : phase shift or cam switch abnormality
Nockenschalter: Phasenverschiebung oder Fehlfunktion des Nockenschalters
yes
ja
Does the cassette holder go up just after the loading is performed without a cassette?
Wird der Kassettenhalter gleich wieder ausgefahren, wenn der Ladevorgang ohne Kassette durchgeführt wurde?
no
nein
Tape sensor abnormality when loading the cassette holder or cassette holder loading abnormality
Fehlfunktion der Bandsensoren beim Laden der Kassette oder Fehlfunktion der Kassettenhalterung
yes
ja
Does the capstan rotate during the above operation?
Läuft der Capstanmotor während des vorherigen Vorgangs?
no
nein
Capstan motor abnormality
Fehlfunktion des Capstanmotors
yes
ja
During the above operation, does either the Supply or Take-up Reel hub rotate, when the cassette holder loads or unloads?
Dreht sich der Avfwickelteller während des vorherigen Vorgangs, wenn sich die Kassettenhalterung senkt, und dreht sich der Abwickelteller, wenn sich die Kassetten-halterung hebt?
no
nein
Capstan belt and reel system abnormality
Fehlfunktion des Capstan-Antriebsriemens und des Spulensystems
yes
ja
When inserting the cassette with a safety tab,is the cassette stopped during detecting the tape remain?
Wird nach dem Einlegen einer Kassette, die nicht gegen Aufnahme geschützt ist, die Kassette während der Erkennung des Bandrestes gestoppt?
yes
ja
Reel sensor system is abnormal
Das Spulensystem ist gestört.
no
nein
Sensor are normal
Die Sensoren sind in Ordnung

2 - CHECKLISTE FÜR DIE FEHLERSUCHE

2 - TROUBLESHOOTING CHECKLIST

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
1	• Power doesn't turn on. Loading operation is defective. Mode shift operation is defective. • Das Gerät schaltet nicht ein. Fehlerhafter Ladevorgang. Fehlerhafter Umspringvorgang.	• Mechanism stops due to mechanical phase mismatch. • blockierung aufgrund von Phasenverschiebung in der Mechanik	• Check mode shift "cassette out FF/REW position can be performed when turning worm wheel. • Überprüfen, ob das Umspringen von FF auf REW möglich ist, wenn das Schneckenrad gedreht wird.
	• Loading operation is not performed • Ladevorgang erfolgt nicht	• Loading motor doesn't rotate.(loading motor is defective or circuit is defective) • Lademotor läuft nicht. (Lademotorfehler, Schaltkreisfehler)	• Check loading motor whether it turns by the outer power supply (12,5V) • Überprüfen, ob der Lademotor mit einem externen Netzteil läuft (12,5V)
	• Unloading operation is not performed • Entladevorgang erfolgt nicht	• S reel does'nt wind the tape • Der Abwickelteller spult nicht auf	• Refer to case 3 in this table. • Siehe Fall 3.
2	• Playback operation is not performed • Keine Wiedergabe	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in playback mode • Position der Mechanikteile überprüfen (Wiedergabe)
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Capstanmotor-, Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen
	• Playback picture doesn't appear. Video recording can't be performed • Das Wiedergabebild erscheint nicht. Videoaufzeichnung unmöglich	• In case of no mechanical problem: Drum is defective.(circuit is defective) • Falls kein Mechanikfehler vorliegt: Kopftrommelfehler.(Fehler im Schaltkreis)	• Check drum assembly • Kopftrommel überprüfen
3	• Playback interruption • Wiedergabe unterbrochen	• Reel rotation detection is defective. (sensor is defective, circuit is defective) • Fehler in der Spulendrehungserkennung. (Sensorfehler, Schaltkreisfehler)	• Check sensor output • Sensorenausgang überprüfen
	• Recording interruption • Aufzeichnung unterbrochen	• Idler doesn't swing • Zwischenrad ist blockiert.	• Check mechanical position as in Playback mode • Position der Mechanikteile (Wiedergabe) überprüfen
		• Reel belt is removed • Spulenantriebsriemen fehlt	• Check the reel belt is removed or not • Überprüfen, ob der Spulenantriebsriemen vorhanden ist
4	• FF operation is not performed. FF operation is defective. REW operation is not performed. REW operation is defective. Others : REV/FF is not performed. Others : REV/FF is defective. • Band wird nicht vorgespult. Fehler beim schnellen Vorlauf. Band wird nicht zurückgespult. Fehler beim schnellen Rücklauf. Andere : kein REV/FF. Andere : kein REV/FF.	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch is not released • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle ist nicht gelöst	• Check mechanical position as in FF/REW mode • Position der Mechanikteile (FF/REW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Der Capstanmotor läuft nicht (Capstanmotorfehler oder Schaltkreisfehler)	• Check capstan motor • Capstanmotor überprüfen

Case - Fall	Fault/symptom - Fehler/Symptom	Possible cause - mögliche Ursache	Check method - Überprüfung
5	• REVIEW is not performed • Kein REVIEW	• Main brake is not released (ON) T soft brake is not released (ON) Idler does'nt swing Pinch doesn't press • Hauptbremse nicht gelöst (ON) Aufrollhilfsbremse nicht gelöst (ON) Zwischenrad ist blockiert. Andruckrolle drückt nicht	• Check mechanical position as in REVIEW mode • Position der Mechanikteile (REVIEW) überprüfen
		• Capstan motor doesn't rotate (capstan motor is defective or circuit is defective) • Capstanmotor läuft nicht (Fehler im Capstanmotor oder im Schaltkreis)	• Check capstan motor • Capstanmotor überprüfen
6	• Slot-in is not performed Cassette can't be inserted • Kassette wird nicht eingezogen. Kassette kann nicht eingelegt werden	• When rod (24) is mounted on the mechanical deck, the position is not correct • Dreieck (24) nicht in der richtigen Stellung auf dem Laufwerk angebracht	• Check mechanical position shown in *(fig. 8)* • In *(Abb. 8)* gezeigte Position der Mechanikteile überprüfen
7	• Capstan servo doesn't work Capstan servo is uneven • Capstan-Servo funktioniert nicht Capstan-Servo ungleichmässig	• Capstan motor is defective • Fehler im Capstanmotor	• Check capstan motor • Capstanmotor überprüfen
	• Tape speed is abnormal FG pulse is not output • Bandgeschwindigkeit ist anormal Keine FG-Pulsausgabe	• Audio control head output is defective (circuit is defective) • Fehler am Ton-/Kontrollkopfausgang (Schaltkreisfehler)	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
8	• Audio output doesn't come out Audio output is small Audio output variation is large Audio output is uneven Audio distortion • Kein Ton Ton leise Starke Tonausgabeschwankung unregelmässige Tonausgabe Tonverzerrung	• Audio control head is defective • Fehler im Ton-/Kontrollkopf	• Check audio control head Check control output • Ton-/Kontrollkopf überprüfen Kontrollausgang überprüfen
		• Tape transport adjustment • Bandantriebseinstellung	• Perform tape transport adjustment again after confirming tape transport condition. • Bandantrieb nach Feststellung des Bandantriebszustands überprüfen
	• Audio noise Others : Audio is defective • Rauschen Andere: fehlerhafte Tonausgabe	• Hi-fi head (drum) is defective (circuit is defective) • Fehler im Hi-fi-Kopf (Trommel) (Schaltkreisfehler)	• Check drum. Check whether B+14V is supplied • Trommel überprüfen. Überprüfen, ob B+14V gespeist werden.

Wird bei den oben beschriebenen Abläufen ein Fehler in der Mechanik festgestellt, muß folgendermaßen vorgegangen werden:
- Demontage, mechanische Phasenverschiebung: reparieren
- Teilefehler, Teileschaden: Teile auswechseln

Sollte die Mechanik keine Fehler aufweisen, Schaltkreise überprüfen.

If the mechanism is found out to be defective according to the procedures described above, perform the following :

- Disassembly, mechanical phase mismatch : repair correctly
- Part defect, part damage : replace parts

If the mechanisml is found not to be defective, check the circuits.

Abbreviation list :

FF	Fast Forward
FG	Frequency Generator
REV/FF	Review
REW	Rewind
SU	Supply
TU	Take-up
UN-LO	Unload

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THOMSON CONSUMER ELECTRONICS

THOMSON CONSUMER ELECTRONICS GMBH & CO. OHG
- SERVICE -
GÖTTINGER CHAUSSEE 76 • 30453 HANNOVER (GERMANY)

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